TRANSACTIONS

OF

The Association of Life Insurance Medical Directors of America

SIXTY-EIGHTH ANNUAL MEETING

Whitman M. Reynolds, M. D.
Editor

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Transactions of The Association of Life Insurance Medical Directors of America

SIXTY-EIGHTH ANNUAL MEETING

The Sixty-eighth Annual Meeting of The Association of Life Insurance Medical Directors of America convened on Wednesday morning, October 21, 1959, in the Terrace Room of the Statler Hilton Hotel, New York, New York, at ten-thirty o'clock, President Henry B. Kirkland, M. D., presiding.

PRESIDENT KIRKLAND — Gentlemen, thank you for taking your places so quietly and quickly. It doesn't seem to me that I need a final call.

I am in the position of having created a program with speakers who are so well known to you that I don't have to give introductions. Dr. Dieuaide is an old friend of ours, who has been with the Life Insurance Medical Research Fund since its inception. Three years ago, he gave a somewhat more comprehensive report, than he usually does, on how things were going, and, since progress is so rapid, I thought that I would ask him to do the same thing today. So, Francis, if you will be good enough to come up here and give us a talk, we would appreciate it. He even has a title this year, which he usually doesn't have — "Accomplishments and Needs of Cardiovascular Research."

ACCOMPLISHMENT AND NEEDS OF CARDIOVASCULAR RESEARCH

FRANCIS R. DIEUAIDE, M. D.
Scientific Director
Life Insurance Medical Research Fund

In modern times, clearly recognized scientific advances are usually, if not always, the result of crucial additions to numerous fragments of knowledge already available. In addition to the fragments of knowledge basic to a great achievement, insight is required to perceive their relationships. We may know many facts in the area of a problem without realizing their bearings. When this is so, we do not even dimly see a forest, but only trees.

History shows that full knowledge of the etiology of a disease is not necessarily required for advances in treatment or prevention. However, truly satisfactory development and application of therapeutic or preventive measures is always based on reasonably good insight into the nature of the disease in question. The tragic deficiencies in present-day control of diabetes (after nearly forty years of insulin) could probably be removed if a good understanding of the disease were achieved.

In planning attacks on the problem of controlling a disease of unknown etiology, the best approach is to study the conditions in which the disease arises and the physiological disturbances associated with it. The effects of therapeutic measures must be included, of course, whenever some basis exists for their use, since these effects may be expected to throw light on the nature of the disease. However, direct efforts to discover a means of treatment are unlikely to succeed. Much futile and wasteful work is done when this principle is ignored. Contrariwise, fundamental research, whatever the stimulus for its undertaking, is likely to give results that sooner or later are valuable.

Today there is talk in some quarters about the need for "crash programs" against cancer, coronary disease, etc. These proposals are based on misunderstanding. Knowledge of these diseases simply is not adequate for the formulation of sensible crash pro-

grams. They would offer no promise, except that of being expensive. The worst feature of such proposals would be the tying up of capable investigators who, left to themselves, might accomplish something of far greater value. No first-rate investigator wants any part of a crash program.

Recent years have seen the unfolding of a great wealth of new knowledge of the cardiovascular system and its diseases. Great strides have been made in the development of new techniques both for research and for treatment, including surgical operations. Important new drugs have been introduced. We still do not understand the causes of arteriosclerosis or of the common cases of hypertension. Yet, a host of pertinent facts have been accumulated which provide the bases for promising further work. Furthermore, great improvements have been made in the management of patients with coronary occlusion and those with serious hypertension.

Rheumatic Heart Disease

Rheumatic fever can now be prevented by the use of penicillin or the sulfonamides. Its incidence has declined greatly, perhaps largely on account of the frequent general use of these drugs. The disease no longer presents a major problem. Its etiology remains obscure. Investigators are still studying this matter as a fundamental problem, particularly in regard to streptococcal products and their effects.

It is worth noting that this research, although oriented toward the cause of rheumatic fever, resulted in the development of the enzyme complex, streptokinase-streptodornase, which turned out to be useful as a therapeutic agent in quite other fields. Further extension of this work currently deals with the mechanism of blood clotting and has in view the development of an agent for the resolution of intravascular clots. This is an example of unforeseen contributions by basic bacteriologic studies to therapy.

Hypertensive Disease

Most striking among recent advances in connection with hypertension is the finding that chlorothiazide is effective as an antihypertensive agent as well as a potent diuretic. Combinations

of chlorothiazide and certain other drugs are regarded by some observers as providing the best antihypertensive treatment yet achieved. Studies of the action of this new agent have already supplied new information about both kidney function and hypertension.

The renal action of chlorothiazide, which is given by mouth, resembles that of the parenterally administered mercurial diuretics. The most prominent effect is prompt increase in urinary excretion of sodium, potassium, chloride, and water. Tolerance to the drug has not yet been reported. As a diuretic, it seems to be well-nigh ideal.

The hypotensive effect of chlorothiazide is remarkable in that it is only seen in patients with hypertension. No significant reduction in blood pressure results in normotensive subjects, although diuresis does occur in them. Other studies also indicate that the antihypertensive action of chlorothiazide does not depend primarily on reduction in body sodium or potassium. Recent work has also shown that the mercurial diuretics behave similarly. These findings suggest that chlorothiazide and the mercurial diuretics may exert their antihypertensive effects by counteracting a pressor mechanism.

It is a common supposition that the kidneys play an important part in most cases of hypertensive disease. The usual view is that, under the influence of injury or other stimulus, the kidneys produce a blood pressure-raising substance. A number of biologic pressor agents are known. Among these, the most powerful vasoconstrictor is angiotensin, formerly called hypertensin or angiotonin. This substance, a polypeptide, is indirectly produced by the action of renin, an enzyme formed in the kidneys. It has not yet been possible, however, to link angiotensin, or any other pressor substance directly with clinical hypertensive disease. These agents are presumably present in the blood in minute quantities, so that their measurement is extremely difficult.

A different possibility is indicated by the finding that removal of the kidneys in dogs (with excretory function provided by an artificial kidney) results in hypertension. Previous implantation of renal tissue prevents the development of high blood pressure. The implication is that the kidneys normally supply an anti-

pressor agent essential for the maintenance of normal blood pressure levels. The preparation from kidney tissue of such a depressor substance has recently been reported. Clearly, more information about non-excretory functions of the kidneys will be helpful.

Much has been learned in recent work on the formation of urine. An ingenious new method known as "stop flow" analysis has made possible the localization of various functions of kidney tubules. Better insight has been gained into the transport of urinary constituents through cells and in the urine. New information has been provided about the action of certain agents, including chlorothiazide, mercurial diuretics, and aldosterone. It seems that currently held views of salt and water retention, which is such a prominent feature of hypertension and heart failure, need to be revised.

Continued feeding of high salt diets has been found to lead to high blood pressure and early death in rats. Administration of potassium chloride was shown to protect against this damage from sodium chloride. A long-term study is now being done to test these effects in dogs, whose handling of salt more nearly resembles that of man.

Studies of kidney lymph and distending fluid have led to a new theory of renal circulation. In this view, a relatively large space permeates the functional tissue. Closely surrounding the tubules, this space facilitates the extraction of certain urinary constituents from the blood. Diluted blood circulates in this space, eventually returning to the blood vessels.

In perhaps one out of five cases of hypertensive disease, the condition is associated with a recognizable underlying disease. In the remaining cases, no underlying abnormality can be found. Discussions of the etiology stress the multiplicity of factors that may play roles in hypertension, thus capitalizing our lack of understanding.

In regard to hypertension as an isolated phenomenon, one view emphasizes the fact that blood pressure levels form a continuous series without a determinate point at which disease is present. The implication is that the blood pressure level is an inherited variable like height. Recent studies, both in this country

and abroad, have provided better evidence for genetic control of blood pressure than was previously available. This does not deny the importance of environmental factors which, indeed, probably determine the development of hypertensive disease as a clinical disorder. Little has been added in recent years to our knowledge of the environmental factors that have long been discussed in this connection.

To sum up, important improvements have been made in the management of hypertensive patients and much helpful new information has been provided about kidney function. Drugs are now available which make it possible to lower the blood pressure in practically all cases. New views have been developed regarding hypertension. The mechanism underlying high blood pressure is still obscure, not only in essential hypertension but even in the disease types which respond well to surgical treatment. An understanding of this physiological disturbance might provide the key to the prevention of hypertension. We may hope before many years pass to see a "break through" in the extensive work on this problem.

Atherosclerosis

In the numerous current discussions of the atherosclerosis problem, scant attention is given to the strikingly focal nature of the lesions in this disease. Yet, a small atherosclerotic patch may be the seat of fatal coronary occlusion, with little atherosclerosis elsewhere. Arterial tissue, once regarded as largely inactive, has been shown to have metabolic activities which are certainly involved in the development of atherosclerosis. This tissue can itself synthesize cholesterol and has been shown to build up much of the phospholipide which accumulates in lesions. New information about the ultramicroscopic structure of arteries promises to throw light on the passage of lipids from the blood into surface cell layers. Following the cholesterol feedings, indications are seen of increased metabolic activity.

Fat deposition has actually been observed in arterial segments implanted in the eyes of experimental animals. Normal aortic segments so implanted in rabbits fed cholesterol are rapidly infiltrated with fats. But arteriosclerotic segments in the eyes of

rabbits on normal diets soon lose much of their fat content.

Observations with fats containing a radioactive tracer have given further indication that the arteriosclerotic process is not wholly passive. When such fats are fed to atherosclerotic animals, the tracer accumulates in atheromata. In normal animals, the vessels show none of the tracer.

We must keep in mind, therefore, the possibility that injuries to arteries or defects in them may play a part in atherosclerosis. As to one type of injury, it is noteworthy that new evidence has been provided of severe degenerative effects from high blood pressure. Another possible source of arterial weakness is inherited defects in the tissue.

It is good to know that the development of arterial thrombosis has been receiving more study in recent years. Occurring in coronary or cerebral arteries, thrombosis is the outstanding clinical sequel of atherosclerosis. It is notable that coronary artery thrombosis does not necessarily occur in cases of even severe atherosclerosis which has presumably existed for years.

Until recently, myocardial infarction was a rare and fortuitous event when atheromatosis was produced in the usual experimental animals by the various procedures in vogue. A short time ago, a monkey with atherosclerosis induced by a high fat diet was reported as dying with myocardial infarction. Two groups of workers in the past year or so have devised dietary procedures which reliably result in myocardial infarctions. This is a helpful finding, although the procedures used are too complicated for easy evaluation.

In connection with thrombosis, there is renewed interest in the mechanism of blood clotting, clot resolution, and related changes in the blood. The overall action of the complicated enzyme system involved in clotting is still obscure. Direct efforts in man to correlate blood fat levels with clotting activity have so far given inconclusive results. In the laboratory, however, different fats have been found to have a variable influence on clot lysis. It is striking that butter, for example, prolonged lysis time much more than corn oil. These results appear to relate the lipids to coronary occlusion. We should also note findings which indicate that high fat meals are followed by "sludging" and changes in

shape and size of red blood cells; blood flow is slowed and clotting time is reduced.

New radiographic techniques have permitted better study of the human coronary arteries both during life and after death. In *post-mortem* hearts, observations on the collateral coronary circulation indicate that substantial blood flow can hardly be expected in these channels immediately after coronary occlusion. Some time is, apparently, usually required for the development of satisfactory functional capacity. Attention is now being given to factors which may speed up this life-saving development.

Recent work has clarified some of the problems involved in the relation between atherosclerosis and lipid metabolism. Related studies extend widely, not only to the array of biologically significant fats and fat-like substances, but also to the interactions between these materials and other dietary constituents, proteins, carbohydrates, and so forth. For many persons, however, interest is centered on blood cholesterol levels. The origin of this interest, of course, lies in the accumulation of cholesterol in atheromata. A further basis is found in the conclusion, now commonly accepted, that patients with coronary occlusion have high blood cholesterol levels (a similar correlation for atherosclerosis as such can probably not be demonstrated). Epidemiologic considerations will be mentioned later. Finally, many observers attach considerable weight to the fact that various methods which induce atherosclerosis in laboratory animals are all associated with elevations in blood cholesterol.

In this experimental work, animals have generally been used, such as the rabbit, which differ greatly from man in diet and body economy. Two groups of investigators, however, have recently succeeded, by dietary means, in producing atherosclerosis and hypercholesteremia in monkeys. Special efforts were required to induce the monkeys to consume the high fat diet. Interestingly enough, individual monkeys varied markedly in their susceptibility to these changes, as is the case in man. No difference related to sex was seen in the monkey results. Studies in monkeys may be especially helpful, although the problem of the human disease must eventually be solved in man.

Most of the efforts in this work are directed toward discovering

how blood cholesterol levels are regulated, thereby learning how to control them. It was learned early that the dietary cholesterol content is not a determining factor. The body has a large capacity to synthesize cholesterol, so this question becomes one of the rate of synthesis and turn-over, the distribution, and the disposition of cholesterol in the body. In the case of this compound, these processes are extraordinarily complicated. Brilliant work, much of it Fund-aided, has largely elucidated the synthesis of cholesterol, but the other aspects of its metabolism need much more study.

It was soon shown that restriction of total fat intake in some measure lowers high blood cholesterol levels. A more striking finding, confirmed by many observers, showed that cholesterol levels can be lowered in most subjects (whether with high or normal blood cholesterol levels) by replacing dietary fats rich in saturated fatty acids with fats rich in polyunsaturated fats. The evidence does not suggest, however, that this effect is due to replacement of a deficiency of "essential" fatty acids. Collateral studies have apparently eliminated the possibility that other factors in the diet, such as vitamins or minerals, may be responsible for the action.

This general conclusion has been widely, but not universally, accepted. As more and more work has been done in the past three or four years to gain more precise knowledge and deeper insight, confusing results have been obtained. It has been clearly shown that blood cholesterol levels are influenced by dietary protein content; and that the protein effect may be influenced by lipotropic factors, such as choline and methionine. Such results demonstrate that the effects of single dietary components, including fat, differ with variations in other components. In other words, interactions between foodstuffs must be considered in planning and evaluating nutritional experiments. When it comes to formulating a desirable anti-atherosclerotic diet, questions are thus raised which cannot now be answered.

Little is known about the clinical effects of high blood lipid levels. Interesting observations awaiting confirmation suggest that high fat meals cause anginal attacks in patients with coronary disease and that these may be relieved by the administration of

heparin; other signs of impaired circulation, also attributed to hyperlipemia, have been described as disappearing with a return to normal blood lipid levels.

Wide gaps in basic knowledge pertinent to the atherosclerosis problem are being gradually filled. It is, perhaps, surprising to note that only last year important new information was provided about the digestibility of various dietary fats. Hitherto unknown influences of dietary protein and calcium levels were described.

Many students of the disease are strongly influenced by epidemiological considerations relating to atherosclerosis. It is well known that the disease is closely associated with certain special forms of hypercholesteremia, including xanthomatosis and diabetes. In addition, studies in many parts of the world are reported to show a direct correlation between dietary fat intakes, blood cholesterol levels and the incidence of coronary artery disease. Results cover a wide range, with the United States apparently leading the world in these characteristics. It is said that there are populations with one-tenth or less of the coronary disease occurring in this country.

In the case of the United States, statistics indicate that the total fat intake, the proportion of hydrogenated (saturated) fats, and deaths from coronary disease have increased together during the past forty years or so. Our standard of living has also risen markedly during these years. In general, societies with low fat diets and little coronary disease may be described as underprivileged or underdeveloped. There are exceptions to this generalization, as is strikingly the case with Sweden and Norway. Coronary disease is reported to be relatively infrequent in these countries though they have a notably high standard of living. This is explained, however, as the result of a high dietary content of unsaturated fats (in fish oils, etc.).

There are other discrepancies in the data, as one might expect in statistics of widely varied origin for such complicated functions as those under consideration. For example, dietary fat intake in Austria is said to be not greatly below that in the United States; but coronary mortality in Austria is much less than half that in this country.

When the specificity of the association in world data between

dietary fat and coronary mortality was tested, as strong an association was found for protein intake and coronary disease. These associations, of course, are not mutually exclusive. They may both be true through interrelation with some unknown function. The other functions that may be involved in the analysis of such epidemiologic statistics are very numerous. Included are not only other dietary factors, but also many social differences in ways of life, habits, etc.

A cause and effect relationship cannot be proved by the best group statistics. This particular study would seem to have served its purpose. It has made strong suggestions and it has greatly stimulated other appropriate lines of work on the problem.

General considerations lead to the conclusion that many factors may enter into the pathogenesis of atherosclerosis. More convincing evidence has recently been presented of heredity as a predisposing factor in coronary artery disease. The same studies also show an interrelated inherited predisposition to hypertension. Such an hereditary predisposition provides no explanation for the actual development of the disease, and it is not a basis for pessimism as to the ultimate control of atherosclerosis.

The inherited character of sex enters into susceptibility to atherosclerosis, since women in the reproductive portion of life are much less susceptible than men. Their protection has been shown to be mediated in part, at least, by sex hormones.

Among the environmental factors which may set up and promote atherosclerosis, the most prominent today are the level and composition of the diet, some aspects of which have been discussed. The possible role of arterial injuries has also been mentioned. Other agencies which have been advanced include lack of physical activity, stress, tobacco, and alcohol. Convincing evidence that any of these is really important is not available. Any one or all of them might play an indirect role.

The hypothesis that atherosclerosis is a disturbance of fat metabolism closely related to overconsumption of fats and relative excess of fats rich in saturated fatty acids, has now been widely accepted. Hesitancy to adopt this hypothesis is still strongly expressed by many workers in the basic sciences. Its acceptance has been indicated particularly by most of those who approach

the problem from a clinical standpoint. More or less definite plans for treatment have been described with increasing frequency in recent publications. A symposium in the *Journal of the American Medical Association* for August 29, and an editorial by Lown and Stare in *Circulation* for August 1959, will be found especially pertinent.

It is generally agreed that in terms of the lipid hypothesis there is no better guide to treatment than the serum cholesterol level. The aim of present therapy, therefore, is to lower this level and to keep it within or near the "normal" range. Lown and Stare have emphasized certain difficulties that should be borne in mind in this program. Uncertainty actually exists as to what is a "normal" or a desirable cholesterol level. For Americans, a level of say 220 mg. per cent may seem acceptable. But levels of 150 to 180 mg. per cent are common in some populations. Furthermore, routine measurements of serum cholesterol should be regarded with some scepticism, unless the laboratory is known to be reliable in this procedure. As a matter of fact, individual determinations in irreproachable laboratories occasionally show significant variations that cannot be explained. Contrary to a common impression, in the course of a series of tests, an individual's cholesterol level may deviate significantly even though, as far as is known, he follows an unvaried regimen. This means that, as in the case of blood pressure levels, physician and patient must guard against undue stress on changes in spot measurements of cholesterol levels.

It is most important to realize that we do not know whether lowering blood cholesterol levels influences the course of atherosclerosis or the incidence of coronary occlusion. No promise can be held out.

A number of special agents found capable of lowering cholesterol levels have been used clinically for this purpose. Included are estrogens and certain related compounds, beta-sitosterol, nicotinic acid, and iodothyronine. Uncertainties and difficulties characterize the use of all. Nicotinic acid seems to be the most frequently used agent. Its mechanism of action is unknown. Little information is available about iodothyronine. Such drugs should be used

only under the close direction of a physician well acquainted with their effects.

The dietary recommendations start at a familiar point, namely, that any overweight should be removed and normal weight should be maintained by adjustment of total calories. Calories should be restricted by decreasing the use of the prevalent dietary fats. Success in lowering the cholesterol level is much more likely when an unsaturated fat, such as corn oil, is regularly added to each meal. Allowance must then be made for the caloric value of this addition by removing an appropriate amount of other fat. A number of ordinary fats will usually have to be eliminated.* Unless there is prospect of more or less indefinite maintenance of this special regimen, there would seem to be little point in initiating it. The corn oil and similar substitutions require persistent, strong-minded cooperation from the patient.

Available knowledge permits the acceptance on general health and nutritional grounds of the broad aspects of this program. But available knowledge does not justify the implication that cholesterol levels control coronary occlusion.

Stimulating and encouraging progress has been made in work on the atherosclerosis problem. It is not long since the disease was regarded as outside the scope of productive investigation. Among the particular aspects about which information is especially desirable are (1) the initiation and development of the local lesion, and (2) the mechanism and regulation of blood clotting and thrombosis. More general needs include a means of diagnosing arteriosclerosis, and above all an answer to the question, "What effect does lowering blood cholesterol levels have on the occurrence of coronary occlusion?" The latter, it is believed, may be provided within a few years.

Cardiovascular Surgery

The scope of cardiovascular surgery has been extended; operative procedures have been progressively improved. Studies of the effects of extracorporeal circulation have helped open-heart

*It must be remembered, however, that present knowledge by no means justifies the elimination of saturated fats. Some of these may be essential, and some certainly contain other nutrients which are highly desirable.

surgery. Safe limits have been measured for the time within which lack of blood flow does not damage the heart muscle. Experimental work has provided a preliminary basis for the use of partial artery-to-vein bypass to support the heart in acute emergencies.

The development of a safe, reliable, artificial pacemaker has helped avoid heart block — a serious danger in certain operations. Better understanding of the physiological mechanism has made possible improved control of fibrillation and restoration of normal rhythm. New information has been provided about procedures to induce cardiac arrest, including the use of hypothermia and potassium.

The dramatic advances of recent years have spurred cardiovascular surgeons to seek further development of their work. For example, a number of research programs are devoted to work on procedures to aid patients in recovering from coronary occlusion.

Support of Medical Research

The Life Insurance Medical Research Fund is the means by which life insurance companies make joint contributions directly to the support of medical research. Through the Fund, life insurance, in a measure, has a nationwide program of its own. In practice, this program is closely interwoven with other programs, as is thoroughly desirable. At present, the Fund receives $1.2 million a year in contributions. Administrative expenses take approximately seven per cent of receipts.

This year the Fund received a legacy of over $71,000. There is no trace of any contact between the donor, who was not a person of great wealth, and the Fund. Evidently the donor was attracted by some public notice of the Fund and considered it worthy of this gift.

Fund grants, which are widely distributed, have aided research on practically all important cardiovascular problems. Applications are so numerous that a large proportion have to be declined. Among new applications, the chance of a grant is less than one in ten. Through the aid of the Medical Directors' Representatives and the Advisory Council, on which have served a succession of distinguished medical scientists, the selection and administration

of grants has won the respect of investigators.

The question is sometimes asked, "Is not too much money now available for medical research?" On the contrary, it is clear that greater total support is needed. Our research institutions are already unable to attract and hold bright individuals who are needed as investigators. In 1958, a group of consultants to the Federal Government estimated that adequate support of medical research in 1970 would require about one billion dollars, three times the sum available in 1957. They emphasized their conclusion that for the best advantage of research half of this total should come from private sources.

Scientific research is not only a continuing social need. As a basic cultural activity, it must expand if our society is to make the progress we desire for it.

PRESIDENT KIRKLAND — Thank you very much, Francis. I am sure you will agree that this has been a masterful presentation of this subject.

I don't think we have anything more troublesome than the matter of claims involving individuals with various neuroses. We are very fortunate in having with us a man who really knows this subject very thoroughly indeed, an old friend of ours. The title of his paper is "The Neurotic Claimant: Evaluation of Disability."

Dr. Peter Denker, Visiting Neuropsychiatrist of Bellevue Hospital, New York City, graduated from Cornell in 1927, and was successively intern, house physician, and resident neurologist at Bellevue. He was Assistant Professor of Clinical Neurology at Cornell, Attending Neuropsychiatrist at Bellevue Hospital, Consulting Neurologist with various other hospitals, and a member of numerous other neuropsychiatric associations and societies.

That sounds like a very long list of attainments, but I assure you that it was contracted down very substantially. In addition to that, Pete happens to be a very old friend of mine. Our friendship goes back over twenty years. We have had tennis rivalry, poker rivalry, and various other kinds of rivalries that I won't go into, over all these years. Unfortunately, I am informed by some of my friends that the constant social juxtaposition that I have had to Pete has brought about certain personality

changes in me, and I have been reliably informed that the only way I can hope to escape from the grasp that he has managed to obtain over my psyche is by giving a paper on neuropsychiatry myself. Well, I find myself incapable of doing that, but I do feel I should take this opportunity, when I have Pete captive in front of me here — ordinarily, he is noted for his faculty of interruption when somebody else is talking — substituting for an original paper, to ask your indulgence while I give a short reading from James Thurber.

THE UNICORN IN THE GARDEN

By James Thurber

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Once upon a sunny morning a man who sat in a breakfast nook looked up from his scrambled eggs to see a white unicorn with a golden horn quietly cropping the roses in the garden. The man went up to the bedroom where his wife was still asleep and woke her. "There's a unicorn in the garden," he said, "eating roses." She opened one unfriendly eye and looked at him. "The unicorn is a mythical beast," she said, and turned her back on him. The man walked slowly downstairs and out into the garden. The unicorn was still there; he was now browsing among the tulips. "Here, unicorn," said the man, and he pulled up a lily and gave it to him. The unicorn ate it gravely. With a high heart, because there was a unicorn in his garden, the man went upstairs and roused his wife again. "The unicorn," he said, "ate a lily." His wife sat up in bed and looked at him, coldly. "You are a booby," she said, "and I am going to have you put in the booby-hatch." The man, who had never liked the words "booby" and "booby-hatch," and who liked them even less on a shining morning when there was a unicorn in the garden, thought for a moment. "We'll see about that," he said. He walked over to the door. "He has a golden horn in the middle of his forehead," he told her. Then he went back to the garden to watch the unicorn; but the unicorn had gone away. The man sat down among the roses and went to sleep.

As soon as the husband had gone out of the house, the wife got up and dressed as fast as she could. She was very excited and there was a gloat in her eye. She telephoned the police and she telephoned a psychiatrist; she told them to hurry to her house and bring a strait-jacket. When the police and the psychiatrist arrived they sat down in chairs and looked at her, with great interest. "My husband," she said, "saw a unicorn this morning." The police looked at the psychiatrist and the psychiatrist looked at the police. "He told me it ate a lily," she said. The psychiatrist looked at the police and the police looked at the psychiatrist. "He

told me it had a golden horn in the middle of its forehead," she said. At a solemn signal from the psychiatrist, the police leaped from their chairs and seized the wife. They had a hard time subduing her, for she put up a terrific struggle, but they finally subdued her. Just as they got her into the strait-jacket, the husband came back into the house.

"Did you tell your wife you saw a unicorn?" asked the police. "Of course not," said the husband. "The unicorn is a mythical beast." "That's all I wanted to know," said the psychiatrist. "Take her away. I'm sorry, sir, but your wife is as crazy as a jay bird." So they took her away, cursing and screaming, and shut her up in an institution. The husband lived happily ever after.

Moral: *Don't count your boobies until they are hatched.*

Gentlemen, I present Dr. Peter Denker!

THE NEUROTIC CLAIMANT: EVALUATION OF DISABILITY

PETER G. DENKER, M. D.
Visiting Neuropsychiatrist
Bellevue Hospital, New York City

Throughout recorded history, from the miracles of early Biblical days to the miracle cures of Lourdes, the neurotic has remained a "problem child" in our midst. It has been estimated that from 40 to 60 per cent of all illness seen by the average practitioner or specialist is "functional" and not organic in origin, and recent figures indicate the annual cost of mental illness at about three billion dollars, excluding the suffering and wasted human lives resulting therefrom. Well before psychiatry was recognized as a specialty, observing novelists had frequently described the neurotic personality with excellent insight into their emotional instabilities, motivation and subconscious gains. The hypochondriac, the obsessive-compulsive, and the hysterical types of psychoneuroses have all been well portrayed by various great writers of many countries, with full appreciation of the "dynamics" underlying their erratic behavior. What is often insufficiently stressed, however, is the importance of motivation as a *constructive* force in the neuroses. Too often, the arm-chair psychiatrist, with his back to his "acouchéd" patient, is more interested in the psychodynamics involved in his patient, than in his rehabilitative potentials. The academic and cerebral satisfactions obtained in the "interpretation" of dream analysis, symbols, etc., outweigh the more practical efforts of helping the patient restore himself to a life of social and economic usefulness. Insight into the causes of neurosis is unquestionably helpful, but not enough to reconstruct a neurotic's life, unless accompanied by more vigorous attempts on the part of the patient, aided by his physician, to overcome his disabling symptoms, by conscious effort. I know that these words will seem heretical to our friends of the purely Freudian school, with "free association" as their therapeutic keynote, but I

would like to point out that Freud, himself, in his later years, expressed a similar doubt.

Let me illustrate further: Florence Nightingale, an indubitable neurotic of severe degree, never left her room for the last 40 years of her life. The excessive identification with her father, which rendered her unable to love another man, may be reasonably described as an important factor in her neurosis and, possibly, other factors played a significant role additionally. Had she been subjected to psychotherapy of the type too prevalent today, she might have wallowed in this neurotic pattern, doing nothing more constructive with her time than attempting to obtain more and more "insight" *ad infinitum.* An archeological type of analysis would have unearthed layer upon layer of progressively "deeper" mechanisms — but, unless accompanied by constructive action on the part of the patient, would probably have ended as an academic exercise. Instead, she spent these isolated years in constant correspondence with hospitals, sanitary commissions and nursing establishments throughout the world, analyzing reports, drawing up intelligent programs of reforms, bombarding British politicians and representatives and *accomplishing* great pioneer work in these various fields. A sublimation for her thwarted female disappointments? Call it that if you will, but a great life resulting from the determined effort to overcome psychological handicaps of severe degree, would be my interpretation. *Motivation* is all important, even though we can't all be the genius she was.

Elizabeth Barrett, under the influence of a tyrannous father, lay a bedridden neurotic existence, until motivated by her devoted lover, Robert Browning, to reconstruct her life once again as a normal, and great, human being. And, lest you get the erroneous impression that these problems occur only in the female sex, or in artists, may I remind you of the lives of many of our great scientists, obsessively devoted to their "jealous mistresses," as so aptly put by Osler, or to the so successful captains of industry who achieve distinction in their various fields of endeavor despite their emotionally unbalanced lives. In fact, so often does this experience occur in our lives that one wonders whether every great man or genius, is not in this sense, somewhat distorted in his perspectives.

For purposes of definition, I would like to state at this point, that all these and subsequent remarks concern only the neurotic or psychoneurotic groups. I am not discussing the psychotic patient, manic-depressive or schizophrenic, nor the psychopathic personality makeups. They are entities unto themselves, and totally different "kettles of fish." Diagnosis in psychiatry, as in all fields of medicine, is of fundamental importance if we are to understand each other. Nor am I speaking of the malingerer, consciously simulating symptoms he is not actually experiencing. As a rule, he is not too difficult to spot.

The true neurotic really suffers from symptoms which, in some unconscious manner, produce certain gains in his daily existence. The symptoms are often defenses to cover-up, or salve, certain deep-seated conflicts, such as suppressed resentments, hostilities, guilt, etc. These *"primary gains"* are fundamental, and it is essential to analyze and understand them, in order to recognize the motivating principles behind the patient's symptoms. As a general working rule, these conflicts are not in the financial spheres, but more concerned with inter-personal problems, such as with parent figures, marital conflicts or difficulties with superiors in employment situations. The gradual development of insight on the part of the patient as to the definition of these problems, and his mature handling of the problem subsequent to such understanding, will usually produce a happy result in the amelioration or elimination of neurotic symptomatology. When, however, this underlying neurotic problem is aggravated by compensation, or litigation, or insurance disability payments, the problem of therapy becomes far more difficult. Now, the patient is being "rewarded" for his neurotic complaints. Society now "recognizes" the "legitimacy" of his symptoms — he may feel he has been "harmed" by our industrial system, through no fault of his, and to *his* thinking, is entitled to the benefits available. This is a beautiful "face saving mechanism," or rationalization, on the part of our hypothetical patient. Why should he, blamelessly hurt by society, physically or mentally, have to roll up his sleeves, and labor, with his sweat, to earn his daily bread? These *secondary gains* carry great motivating force. Each weekly or monthly check from an insurance policy, be it compensation or disability income, only reinforces his con-

viction that society adjudges him disabled and, at the same time, helps bury more deeply the true mental mechanisms involved in his neurosis. Now he can unconsciously punish his wife and family, or his employer, by continuing his invalid existence, with multiple subjective complaints, accompanied by no organic findings on medical examination. It is amazing how often in practice one finds such neurotic patients able to read, watch television, go to a "movie," take walks around their areas, drive their cars, do various household chores, etc., and yet who claim total disability for return to their jobs. In the case of male neurotics, they are often not disturbed by their wives' return to an industrial occupation, even though they will spend their time at home caring for the children, taking them to school, etc.

All of which leads up to the crucial question involved in this address: "When is a neurotic claimant actually disabled from holding his job," and "When isn't he?" What criteria does one use in attempting to define this problem fairly? And how does one attempt to obtain the data, on which to base a solid opinion?

First, may I be permitted to remind you that a neurosis is not synonymous with economic disability. True, neurotic symptoms may be distressing, in various degrees. Anxiety, functional gastrointestinal distress, tension headaches, etc., are not pleasant. But, has it occurred to you how common these symptoms are in patients who continue at their jobs and perform their duties with reasonable efficiency. In fact, they are "the bread and butter" of our psychiatric practice, and where the motivation toward cure is wholesome, they will be seeking appointments early in the morning, or during lunch hours, or late in the day, or on Saturdays, so that they may continue uninterruptedly at their work and not jeopardize their economic future. As noted earlier, some of our greatest leaders in industry have neurotic problems, though able to handle their business responsibilities adequately. Why this difference between *their* behavior and that of the neurotic claimant? The answer I believe is simple: *the monetary reward,* be it a compensation check, potential litigation with the "pot of gold at the end of the rainbow," or the monthly disability income of his insurance policy. While this secondary gain is present in the picture, the outlook for recovery is bleak indeed. The average neurotic would rather "settle" for 50 per cent

of his previous income, than have to face the ordeal of the daily routine of economic effort, especially if, at the same time, he is looked upon by society as disabled.

What is it that gives him away? First, of course, is the normality of physical findings in contradistinction to his multiple complaints. After careful examination, the clinical picture just doesn't fit! With only a modicum of scepticism in our makeup, it isn't difficult to see that the longstanding backache, or gastro-intestinal complaint, or headache, without abnormal clinical findings, is unlike the picture we see in our non-neurotic patients. Despite the chronicity of symptoms he has been maintaining his weight and usually looks the picture of health. Question him carefully, and *sympathetically*, not in a hostile manner to arouse his resentment, and you will often be amazed at his *admitted* activities. And remember, that he is most likely doing even more than he admits, as is often shown by inspection reports on this point. Let him talk freely; give him time to "open up." This is usually no problem with neurotics, who love to do so. You will often be surprised, if you allow them enough time, to note their contradictions, their "protesting too much," etc. Though they may allege impairment of memory or concentration, one finds their own history belying their words. They usually remember very well what they *wish* to remember, and have a convenient "Fifth Amendment memory" for details they'd rather suppress. And how often does a neurotic complaining of dizzy spells show actual dizziness on examination? In my experience, very rarely, and again, "the picture doesn't fit." Similarly, the patient's lack of insight, as to the important emotional factors going on in his life situation, is striking. Often, he won't even mention these factors which, when elicited, are of such glaring and obvious importance, unless sympathetically and tactfully questioned. Then, the *true* picture is obtained and it is usually not too difficult to piece together and understand, even with little psychiatric training. The good general practitioner, knowing the family situation and the problems facing the patient, and taking the time to listen, can do as good a reparative job in these cases as can the psychiatrist and at far less expense to the patient or the Insurance carrier.

This is true, however, only when the secondary gains are removed. These financial gains, maintaining the retreat into

neurotic illness, must be eliminated if the patient is to get well and return to a useful economic life. *This* is the vicious circle of disability or compensation payments for such neurotic illness. It is too narrow a point of view, as is illustrated in the Workmen's Compensation Laws of New York State, to refuse to differentiate between neurotic and physical disability. In the neurotic, regular compensation or insurance payments hinder his recovery; whereas in physical disabilities, where no neurosis is present, this is usually not the case. The only solution in these cases is removal of the secondary gains by means of a final lump-sum settlement and closing of the case. Most doctors and lawyers appreciate these days that such a procedure is in the best interests of the patient. In the Scandinavian countries, with all their progressive social enlightment, they have for many years legally insisted on closing a case of neurotic disability by just such means once the organic possibilities are definitely ruled out; usually in a three to six month period. This is not a punitive, but a rehabilitative measure of potency, and a great stimulus toward constructive motivation on the part of the neurotic claimant.

The same "philosophy" of the neurotic claimant must likewise be borne in mind in reference to "Major Medical Insurance," a comparative newcomer in our midst. Though psychotherapy is unquestionably helpful in the treatment of these neurotic patients, are we really helping, or hindering, their recovery by continued payments for such treatment? Is the patient's motivation being strengthened, or attenuated, when he need make no sacrifice on his part, but has all his bills paid for by a third party? Even before this question arose in relation to Major Medical Insurance payments for psychotherapy, I would like to remind you that many psychiatrists in the past 30 years have pointed out that the prognosis for recovery depended in substantial degree on the amount of sacrifice a patient was willing to undergo in order to be cured. This included financial sacrifice, with denials in other spheres of expenditures, to pay for such psychotherapy. The disastrous experience of your Insurance Companies in the 1920's in the realm of Accident and Health Insurance should likewise be recalled. The high percentage of neurotic claims, and the fact that the duration of the claim was proportionately greater the

larger the amount of monthly disability income, should clinch the point. Lastly, where the amount of disability income reached $500 monthly, the number of cures decreased to almost the vanishing point.

It would, therefore, seem to me that, though well-meaning in its purpose, "Hell is paved with good intentions" when it comes to the question of payments to neurotic claimants. It was for this reason that I recently advised one of your insurance members that, in the question of payments for psychotherapy in neurotic, not *psychotic* cases, the patient be required to pay a substantial part of the bill himself. I still feel this to be sound practice and understand it has been working out rather well, and I hope it will be continued, in fact, even extended to the point that a time limit can be fixed for such therapy. Sooner or later, the patient must be made to realize that his motivation is attenuated and not strengthened, by such "coddling" on the part of your companies.

I have intentionally only attempted a rapid "bird's-eye" summary of this most important problem, and I am sure there will be many of you who have questions to raise, or points of view different from mine. I have allotted sufficient time for just such discussion and, unlike our recent distinguished visitor from Eastern Europe, will attempt to answer them candidly.

PRESIDENT KIRKLAND — Thank you very much, Pete. That's really going to the point. Time is moving along, and we want to leave enough time for questions. First of all, I'm going to ask Dr. Johnson to open the discussion.

DR. JOSEPH W. JOHNSON, JR. [Interstate Life and Accident, Chattanooga, Tennessee] — Harry, it's always fun to tackle this problem, because I have, for a number of years, I'm afraid, had a sort of evangelical identification with this matter, and I think that Dr. Denker, with the sensitivity of a skilled psychiatrist, has pointed a very sensitive finger at our subject.

The interesting thing is that we cannot actually tackle this problem with a lack of responsibility, and this, Dr. Denker points out.

We have a different relationship with the insured rather than the uninsured patients, and we hang our heads not infrequently

with the realization that, as physicians, we contribute to the illness of our patients. But we in the insurance industry, I think it can be fairly said, do contribute to stability.

As Dr. Denker points out, because of motivation, there can be an extraordinary creativeness in our neurotic patients. There has been a certain amount of glibness, as one reviews the psychiatric literature, in attributing certain personality illnesses to certain creative individuals. It is not uncommon to refer to the actuary, or the CPA, for example, as an obsessive compulsive. It is not uncommon to refer to some of our successful agency men as hypochondriacs. As a matter of fact, it is not uncommon to refer to one of the medical directors here as a hypomanic, because of tackling this thing with due integrity, as people responsible to our companies and to our policyholders.

Now, I do not believe that all creative individuals are suffering from personality feedbacks. There are many creative people I would love to have on my books, either for life coverage or medical coverage. Concerning neurotics, well, let's put it this way. I would have some hope for Elizabeth Barrett, because there's always somebody like Mr. Browning. Still, we don't know; the tragic difficulty of this industry of ours is that we don't know, and have no means of communication, as to what is going on in this field.

Putting on my evangelical hat, I hope, and want to urge, that there will be some discussion about this; that in this broad area, which remains one of the largest public health problems in our country, the insurance industry will at least establish a language for communicating with our colleagues in psychiatry.

We cannot look upon every creative person as an impaired risk. There are many creative people who are impaired risks; yet, we have been foot-dragging in this industry in terms of establishing a language. I hope there will be some earnest discussion on this.

I want to congratulate Dr. Denker for bringing this problem before us. When I see a unicorn in my garden, I hope my wife will come out and see it with me. Thank you.

PRESIDENT KIRKLAND — Thank you very much, Joe. I would like to say in passing that I personally saw two actuaries wince

perceptibly at one of your remarks. Maybe more than two winced.

The discussion is now open to the floor.

DR. JAMES H. READY [General American, St. Louis, Missouri] — There is one phase of this problem that I think we should not overlook, that is, the matter of what communication means in getting across to our colleagues. We have to get some further means of communication to get across to the people affected with this problem. I should like to hear some discussion on that.

PRESIDENT KIRKLAND — Do you want to take these questions one by one?

DR. DENKER — I don't quite understand what you mean by your question.

DR. READY — When you are dealing with this problem and a case comes to litigation, where we try to get off the risk, we know very well it is a neurotic and it should be settled as a lump-sum settlement in due course of time. Then, we have legal resistance. How are we going to get around that problem?

DR. DENKER — Of course, I realize, as I brought out in my paper, that the laws behind psychiatry — and practically every capable and ethical lawyer I have spoken to admits it — are at fault. Just take the state laws about compensation. They don't draw any distinction between neurotic disability and physical disability, as I mentioned. I honestly think that is one of the things that, with time, will have to change. The laws are awfully slow to change, but old rules for insanity are being changed, and the old MacNaughton rules, which were sort of dominant factors on which a person's sanity or insanity was based, are gradually giving way to recent rules like the Durham decision and so on.

I think Dr. Ready has raised a valid point, but I don't see why, in a question of neurotic disability with an insurance company, the two lawyers can't get together and even bring a third party, an impartial psychiatrist, into the picture. It would be in the best interests of the patient. I think, if the patient has an honest doctor, he would give an unprejudiced opinion. It would seem to me that the lawyers and a psychiatrist should get together. I have often seen it done.

I happen to be one of the impartial specialists for the Work-

men's Compensation Board in New York, and, despite the fact that the law draws no distinction between these two types of disability, I have seen the lawyers often, on the two sides, get together and, on the impartial advice of the specialist, work out a lump-sum settlement. They will throw in a few fancy phrases like "for important therapeutic reasons," or some such thing, but they will work out a reasonable compromise, and from then on, the patient gets out, with the possibility of doing something useful again.

I don't feel so bleak as to say that we're up against a stone wall. I admit that it requires education on the part of many lawyers, but I think, where the principle is sound, where it really is to the best interest of the patient, it can be done, gradually.

DR. DAVID M. BENFORD [Metropolitan Life, New York City] — There are many patients, disabled with physical disabilities, who prolong their attempts at rehabilitation or attempts at returning to work, because of a neurotic overlay or reaction they have to their physical injury; in other words, they are not just a neurotic problem and they do have physical disabilities, but they could be returned to productive employment by rehabilitation. I wonder if you would care to say something about the psychiatric aspect of getting these patients to seek rehabilitation so that they can return to employment?

DR. DENKER — As far as the word, "rehabilitation," goes, I'm not on the bandwagon. That's almost heresy, I know, but I'm trying to state again, honestly, the results of my own experience. I think that rehabilitation is fine where a person has a fracture or maybe a hemiplegia, that is, where it is just a physical thing. But I have yet to see rehabilitation doing much good when it is a psychiatric problem and there are monetary factors present. In the case where the monetary factor, these secondary gains, is present, I have never seen good results.

I know of three cases right now, young women with hysterical paraplegia, who have been in rehabilitation institutes for years, but they are getting a weekly check for compensation, and the psychiatrists themselves tell me, "We'll never get anywhere until this is out of the picture."

I think you have to take this with a grain of salt. I think

some of the claims for rehabilitation in the last few years have been exaggerated, even if they are true. I still think these financial angles have to be worked out before you can attempt to do good psychotherapy or good rehabilitation.

In a person like the one you mentioned, with a combination of both physical and psychiatric angles, and I am talking entirely about the psychiatric angle in his case, if the physical ones can be worked out, he will still be disabled if the psychiatric ones are present. Generally, the psychiatric factors are the dominant part of the picture and not the physical.

DR. HARRY E. UNGERLEIDER [North American Reassurance, New York City] — Do I understand the emphasis of your paper to be that we should resist putting neurotics on the rolls, in the first place, and, if we do have to put them on the disability rolls, we should immediately move toward striking them off by a lump-sum settlement?

DR. DENKER — Yes, that's pretty much it. In other words, you should be very careful before you start giving them the payments, because I think, lots of times, the payments are given altogether too glibly. I think you should try to bear in mind some of these points of distinction which I tried to present. Because a person has a neurosis, he is not economically disabled.

If I recall accurately, unless the policies have changed since my day, most of your policies require total and permanent disability. After all, you have plenty of figures to back you up. In most neuroses, 60 per cent of them get well within one year, and 15 per cent, maybe, within a two year period. Right off the bat, you have the majority of patients who, it seems to me, by no stretch of the imagination, should be considered as permanently disabled.

Then, remember, also, even of the 60 and 75 per cent, the question as to totality of disability is very important. It is amazing to me, as I have said before, how many of these people will complain of every symptom in the lot but they can seem to do a great deal which involves their own pleasure and enjoyment. They can watch TV, read books, ride around in a car, go to the movies, and do all sorts of things, which, in my opinion, does not constitute disability. They will tell you these things

themselves if you engage them slowly and considerately. If you don't take the attitude, "Well, you've been sent to me by Equitable Life; what's the matter with you?" or don't become hostile, or argumentative, but instead just listen, the first thing you know they'll point out these discrepancies themselves.

If you start right off and pay these people when they have been sick, rather than disabled with a neurosis, you'll have trouble later on. But even if you have made that "mistake," I think, come six months or a year, wherever you want to draw the line — just as in the Scandinavian countries — you should get together with the fellow's doctor, as I mentioned a moment ago, on the question of litigation and the lawyers' attitude, and sit down and talk with him, just as you would in going back to get the past history of someone who died of a coronary.

Is it really in the man's best interest to be getting his two or three or five hundred dollars a month if this reacts as a deterrent to his recovery, that is, if it is true that the doctor says, "That's one of the great factors impeding his recovery"? Get together with the lawyers and if his own doctor feels that way, I think, sooner or later, you'll be able to get off the hook in many of these things.

DR. WHITMAN M. REYNOLDS [Equitable Life Assurance, New York City] — Do you feel that insurance companies should press for laws that would permit early compromise settlements in these cases, as they do in the Nordic countries?

DR. DENKER — I don't know whether that has to be done by lawyers. I really wouldn't want to express an opinion about that. But why can't you people in the insurance industry get together and have some kind of a clause in the policy, a clause similar to the one you put in for major medical? I understand that the patient will pay, say, 50 per cent and the insurance company will pay 50 per cent, or something of that sort, up to a certain limit. Why couldn't you likewise insert a stipulation in the disability clause that where the disability is due to neurosis, a lump-sum settlement be worked out at the end of six months, or the payments only continued to six months, or just mention the neurosis and not consider it permanent and total?

I think, by discussion with your own legal department or

your own disability department, some such type of protection could be put in. It would work to the advantage of both parties.

DR. ARTHUR E. PARKS [Canada Life, Toronto] — Mr. President, I would like to ask Dr. Denker what he thinks about a neurotic applicant for life insurance as a mortality risk.

DR. DENKER — I think that can be answered very definitely. I believe there have been numerous mortality studies, which show that they have excellent longevity. We checked five hundred cases, as I mentioned, and checked the figures by the actuaries, and, if anything, they found they had a greater longevity than the average norm.

However, there is a big distinction between the expectation of life and the expectation of disability. From the morbidity standpoint, I think they're terrible risks, when there is disability involved, for all the reasons I mentioned. I think that is common experience, and I believe every neurologist and doctor in practice will tell you, despite all the complaints and their continually going to doctors and so on, they go down to Florida; that is, these people seem to overprotect themselves. Maybe, it's because they are running to Florida in the wintertime or Maine in the summer to get away from the New York heat or whatever it may be, but, certainly, I think it can be stated with definite assurance, from a longevity standpoint, there is nothing to worry about.

DR. JOHN G. ROSS [Mutual Life, Waterloo, Canada] — I have two questions. First, I wish to ask the group here if anyone has the enlightened view, that Dr. Denker has put forward, that there is a restrictive loss in the disability payments, restrictive either in time or in amount, and what has been their experience in enforcing it.

Secondly, I would like to ask Dr. Denker what should be done with the type of patients, or these types of disability claims that we run into, where the individual is near retirement age and it seems that he retired on the payments. He can do all the things Dr. Denker mentioned, putter around in the garden and so forth, but he can't work.

PRESIDENT KIRKLAND — John, I'm afraid your first question would lead us pretty far afield. It would amount to canvassing the entire audience, and I'm afraid we haven't got the time for

that, if you don't mind. The second question, I'll turn over to Dr. Denker.

DR. DENKER — As to this retirement problem, I've seen it often. As a matter of fact, I saw a case for the Metropolitan Life the other day, aged 60, with all kinds of neurotic symptoms and so on. There, again, you try to use your judgment in relation to the fellow's past. You will probably find you can get the story that he was always a neurotic type of person. I don't think a person usually begins getting neurotic at 60 just because he wants to retire. I think you will find that his previous personality makeup showed the same type of neurotic symptoms as he had then, whether he's a poor sleeper, nervous, tense, with a history of ulcers, or whatever it might be, so you have some comparison to go on.

There was one additional thing I did want to point out with the potential retirement people; that is, you have to keep your eyes open because very often there is really malingering, in addition to, or without preexisting neurosis.

I was talking to an agent the other day, who was telling me that he couldn't remember anything. He had trouble in concentrating. He couldn't sleep. But when it came to rattling off the different policies and the dates and how much disability income that would give him and what he would be doing in Florida and so on, the clinical picture did not hold up. He said he couldn't remember anything, but he rattled off these things like a machine gun. Likewise, I had the benefit of an inspection report of what his activities were in Florida.

I want to stress again that inspection reports can be very helpful in the estimation of any patient's activities. If nothing else, they will tell you whether he is truthful. You will see a fellow, very often, who says he can't do this or the other thing, and the inspection reports show he is doing these things. All right, you have one clue there; you're dealing with a liar, whether he's trying to lie or not.

However, as a generalization, when you're dealing with these retirement cases, I think you should keep your ears cocked first, to his neurosis, which may or may not be present, and, second,

to whether he is malingering and consciously saying all kinds of things.

Harry and I have a mutual friend, who was having difficulty in his company, one of the insurance companies, and, despite the question of whether he was going to retire, he had been out selling all kinds of mutual funds. But, at certain times, he just couldn't work. You have to bear all those things in mind. As I said a moment ago, you can't say flatly that every patient coming up for retirement is neurotic, or is, or is not right about his request. You have to try to weigh the whole, total picture, just as you do everything else in medicine.

PRESIDENT KIRKLAND — I'm very sorry but we have time for only one more question. It took a long time to get you going, but I can see that we would be here all day the way things are going now, now that we've stirred you up. I wish we could keep Pete with us the whole three days.

DR. I. MACDONALD HALL [Massachusetts Mutual, Springfield, Massachusetts] — The comments regarding terminology raised a question and confused some of us, regarding the terms for some of the reactions. I wonder if Dr. Denker would comment on the schizophrenic type of reaction, as to whether these people should be considered as too psychotic, and so on.

DR. DENKER — Wherever you get a paranoid reaction or a schizophrenic reaction, you can't call it neurotic. You may not be able to call him completely psychotic, but it is very suspicious, among that psychotic group. For my money, that would be the 207 group rather than the 257 or 258 group, because a neurotic usually does not have paranoid or schizophrenic symptoms.

PRESIDENT KIRKLAND — I think we are all very grateful to Pete, who is a very busy man, for coming here, and I just want to express, on behalf of all of us, our sincere appreciation to him and also to those who have discussed his paper. I'm sorry we do not have more time. Thank you very much, Pete.

The next item on the program is "Highlights of the New Build and Blood Pressure Study," by John Hutchinson, Medical Director of the New York Life Insurance Company.

HIGHLIGHTS OF THE NEW BUILD AND BLOOD PRESSURE STUDY

JOHN J. HUTCHINSON, M. D.
Medical Director
New York Life Insurance Company

The last intercompany study of mortality in relation to build was reported as a supplement to the Medical Impairment Study of 1929 and was actually published May 1932. Issues from 1885 to 1927 were studied over the nineteen year period from 1909 to 1927. Because many of the infectious diseases which were very significant causes of death at the time, covered in the earlier study have now all but disappeared from current causes of death, we may naturally ask if deviations in build today lead to variations in mortality expectancy that are greater than, equal to, or less than the variations found 30 years ago. Not only have the causes of death changed dramatically in the intervening 30 years, the death rate itself is entirely different. A new Basic Mortality Table has been prepared representing the intercompany mortality experience for standard medically examined ordinary issues from 1935 to 1953 traced to their 1954 anniversaries. For every age group and for every duration period studied, the 1935 to 1954 mortality rate was appreciably lower than the 1909 to 1927 rate. At the younger ages the mortality rate is only one-third of what it was for the earlier investigations; even at the older ages where we might expect the least improvement, the new mortality rate is only two-thirds the rate applicable during the period covered in the last intercompany build study.

Build Study

Applicants today are taller on the average than the people studied in the Medico-Actuarial Mortality Investigation (M.A.M.I.) of 1912 to 1914. In general, those people insured 60 to 75 years ago, whose mortality in relation to height and weight was studied just prior to World War I, showed no change in average height among age groups over age 20. The last build study in 1929, although not designed to bring out details of change

in height for different age groups, confirmed at least that average heights for men over 20 was practically the same then as it had been in the earlier M.A.M.I. In the current study, the average height for men of age groups over 40 is very nearly what it was 60 years ago. All age groups under 40, however, demonstrate greater average heights now than in the previous studies with the greatest differential at the ages under 20. Perhaps this represents some of the effects of the increasing knowledge of nutrition. Among insured women the current study shows a slightly greater height for all age groups than was found some 40 years ago. I do not know whether this represents the effect of a change in nutrition or merely the statistical effect of the "high-heel" shoe.

In general, the average weight for men in the present study is slightly greater than in the earlier studies; this is more marked in the short men than in those of greater than average height. On the other hand, the average weight for women is less in this study than was found in 1929 and in the earlier M.A.M.I. Several factors are probably included in this apparent difference: lighter clothing for women today, higher heels on their shoes, definite change in fashions which stress slenderness, and probably a more representative portion of American women than was insured prior to the earlier studies. About one-fifth of the people studied weighed at least 10 per cent over average weight, and between 5 per cent and 10 per cent of the entire group weighed 20 per cent or more in excess of average weights.

The weights associated with the lowest mortality for both men and women are appreciably under the average weights with the exception that among young men (issue ages under 30) average weights or even slightly over average weights seem to be associated with this most favorable mortality.

In order to ascertain the significance of certain minor impairments appearing in combination with varying degrees of underweight and overweight, a special study of mortality experience was carried out. A minor impairment was herein defined as one calling for a rating of at least plus 10 but not more than the maximum allowable debit compatible with standard insurance. Tables indicate the mortality experience by build for age and sex according to groupings for height and weight with known

minor impairments, without known minor impairments and finally with and without known minor impairments.

Time does not permit presentation of the details of the build study. I believe it is important, however, to emphasize that, at least among overweight males, there is a definitely increased mortality experience with minor degrees of hypertension, family history of cardiovascular-renal disease (two or more cases under age 60), or when small amounts of albumin were found on urinalysis. I can offer no obvious explanation of the mechanism whereby moderate overweight in combination with blood pressure of only the slightest upward departure from normal produces a mortality expectancy nearly twice the expected.

In both men and women the higher mortality rate among overweights increases with the degree of overweight. The causes of death reflect increases in cardiovascular-renal disease and diseases of the digestive tract — principally biliary disorders and hepatic cirrhosis. With increasing degrees of overweight, the mortality ratios from cardiovascular diseases exceed the corresponding ratios for all causes. Diabetic deaths demonstrate a steeper increase with increasing degrees of overweight than do the deaths from any other of the individually listed causes.

One corollary study was designed to demonstrate any apparent change in mortality experience between individuals who had been overweight and who had reduced their weights, as compared to others who remained overweight. These individuals, who originally were substandard by reason of overweight and who were later able to qualify for standard insurance following weight reduction, gave an experience very comparable to that of the general standard group.

Blood Pressure Study

The mortality experience according to blood pressure has been studied in relation to age at issue, sex, duration, whether or not accompanied by minor impairments, and cause of death. There is a tremendous wealth of material made available here, but above all one feature seems to be substantiated from every viewpoint: there is a sharp rise in mortality experience with even small increases in blood pressure. Because of the vital bearing this has on our future underwriting, probably each one of us will seek to

account for logical explanations of what are indisputable statistical facts. You will note instantly the impact on underwriting if I tell you in that group of men 30 to 39 years old at time of issue with recorded blood pressure between $\frac{138}{88}$ and $\frac{147}{92}$ produced a mortality experience of 200 per cent. This is not a small experience, nor is it a chance variant. In this particular group, there were 320 policies terminated by death and a figure of this size is accepted as statistically reliable. For this example, I have not picked out an exception nor an exaggerated illustration to create alarm; rather this example is typical of the findings demonstrated over and over again in this extensive evaluation.

The difference in mortality according to blood pressure between men and women is most notable. Only at those blood pressure levels representing substantial elevations (and here the numbers are generally too small to denote great reliability) does the mortality experience for women exceed 125 per cent of the Basic Table 1935 to 1954. This figure of 125 per cent, however, is roughly equivalent to a double mortality rate for standard female risks without known impairments.

From the medical point of view, we would anticipate a deferred excess mortality experience in those men found at issue to have only slight to moderate increase in blood pressure. Our concept of the effect to these nominal increases in blood pressure (pressures in the range $\frac{138}{88}$ and $\frac{147}{92}$) would prompt us to predict that many years would be required before we could measure a significant increase in the incidence of cardiovascular deaths when compared to a normotensive group. Such is not the case; generally speaking, the greatest mortality ratios are in the earlier (1 to 5 year) durations, but throughout all durations the mortality ratios remain well above the standard levels.

It will come as no surprise that the causes of death, recorded in connection with the increased mortality ratios of this particular study, show marked increases in the cardiovascular-renal diseases. Diabetes is listed here as a cause of death more frequently than is encountered in causes of death listing for general mortality studies. With increasing degrees of elevation of blood

pressure, there is a steeper rise in the death rate from cerebrovascular disease than from any other cause.

One of the very interesting ancillary studies compares the mortality experience of those entrants who had normal electrocardiograms with the experience of those having similar blood pressure levels but on whom electrocardiographic information was not available. The mortality experience for those entrants with normal electrocardiograms is significantly more favorable than for the group without the tracings. Because this apparent advantage is demonstrable even at blood pressure levels where we would not anticipate significant electrocardiographic findings, we must interpret these data with great care. I believe most of us hesitate to attribute this amount of underwriting value to electrocardiograms taken for routine or screening purposes. That the improvement in mortality is demonstrated may very well reflect the overall more careful selection given large amount applications from which the majority of the cases in this particular study were derived.

The American people are being informed more today than ever before regarding the relationship of nutrition, build and health. They are likewise being advised from many sources regarding the problems concerned with elevated blood pressure. More of these people are applying now than previously for life insurance and the indications are that this growth will continue. Until there is a real breakthrough in our knowledge as to the cause, prevention, and cure of the degenerative forms of cardiovascular disease, the relationship of build and blood pressure will continue to be of paramount concern to the life insurance company medical director. This new study will be his reference point as he plans an intelligent course for the future.

PRESIDENT KIRKLAND — Thank you very much, John. This is, of course, an informational paper, as you know. The details are extremely extensive and will bear a lot of study.

I see Ed Lew back there. Ed, I wonder if you could come up here and comment on John's presentation? Ed is the architect of this study, and this will give you a chance to see him in action.

MR. EDWARD A. LEW [Chief Actuary, Metropolitan Life, New York City] — As an actuary who admits to being both obsessive

and compulsive, I want to tell you that I feel very strongly compelled at this particular moment to express my personal appreciation and that of the Society of Actuaries for the magnificent help and counsel which, first, your Mortality Committee, under Dr. Bolt, and then the Committee under Dr. Hutchinson, gave us. I don't think that we could have been in a position to state some of the rather startling findings with the equanimity we did had it not been for their being able to help us out.

There are several points I would like to stress as being, perhaps, the key issues in this voluminous study. The first that deserves attention, perhaps, is that we have, from mere usage, become accustomed to speaking of overweight or hypertension with respect to the average blood pressure. There is no fundamental reason for doing that. As John Hutchinson pointed out to you, past age 30, the best or optimal weights associated with the lowest mortality are those something of the order of 20 pounds below average, so that when we speak of a man whose weight is 20 pounds above average weight, I think we would be on much sounder ground if we described him as weighing 40 pounds more than he should, as the optimum.

If you carried this thinking all the way through, instead of getting these figures on overweights of the order of 20 per cent for people weighing 10 pounds or more than average, or 6 or 7 per cent weighing 20 or more pounds over, on an average, you would find that more than half the population, certainly the male population, is overweight with reference to the optimum weight. I think it would clear up a lot of our thinking as to why we get these results if we focused more attention on overweight or hypertension with reference to average weight or average blood pressure.

The second point which I think deserves considerable emphasis is the startling result which we got in the way of the mortality experience on slight elevations of blood pressure. I don't know how many of you saw the *World-Telegram* last night, but the Editorial Department of that newspaper saw fit to contact a number of persons, whom they referred to as "prominent physicians," and one of these prominent physicians indicated that he knew what the study was all about without having seen it.

There were some figures, for people 40 or more years old, which were gotten up as an underwriting gimmick, and he had paid no attention to them, because it was just one more of these things that the insurance underwriters had compiled.

I am mentioning this to you because I think that the entire insurance business, and particularly the medical men who represent the insurance business, will be on the firing line from other portions of the medical profession who will tend to, putting it mildly, pooh-pooh these mild elevations in blood pressure, because in their clinical experience they have probably not observed anything very startling.

However, by the standards which we use, we have to point out that we are confronted with markedly excessive mortality, which, in my humble judgment, is important not only for the insurance business, but I would say, for clinical medicine as well, if only to the extent that it may be a warning signal so that a physician should look at a case much more carefully and not disregard these slight elevations, which I believe have been neglected as a matter of tradition rather than as a matter of real knowledge.

Finally, and I think this points up an entirely new chapter in medical underwriting, there is this finding in the Study on Build and Blood Pressure in combination with various other impairments. I may be getting beyond my depth, but I like to think of build overweight as a symptom. I like to think of blood pressure, certainly in the way of a mild departure, as a symptom. The very solid structure that we have erected in underwriting has always proceeded on the assumption that if you have two impairments, generally speaking, with some rare exceptions, you can take the rating for the one and the rating for the other, add the two, and obtain a pretty good estimate of the value of the risk.

I think this study emphasizes, in a novel manner, that that viewpoint has to be abandoned when you are dealing with symptoms which might indicate interdependence, either in the same general system or what I would like to refer to again as some more advanced stage of a progressive degenerative disease to which we have not yet given a name. I would like to emphasize that the reason for that is because of the very high association between

overweight and elevated blood pressure. We have included a table showing how consistently the blood pressure goes up with the increasing degree of overweight.

Moreover, a very high proportion of people — I wouldn't want to say precisely what the figure is, but it might run something like 40 or 50 per cent — included in the study of overweight also appeared in the study of elevated blood pressure, and they are the same people. They have both overweight and blood pressure which is above the normal range, and this particular combination, which is by far the most important underwriting problem that you will have to face, perhaps, deserves to be studied *in toto* and not with respect to its separate parts, as we have tended to do in the past. I think, to a lesser degree, that is true of certain other combinations.

I believe this is all that I would like to impose on you of this tremendous volume, but I owe it to you to mention some of the instructions that the Society of Actuaries sends out concerning the Panel Discussion, which is due to take place at the forthcoming meeting of the Society of Actuaries, on November 9, 10 and 11, 1959, at White Sulphur Springs. It was indicated that the Panel Discussion on the Build and Blood Pressure Study would take place on Tuesday afternoon. I want to correct that. This correction has been sent out to a number of people, but I am not sure all of you received it. The Panel Discussion will take place Monday afternoon, and I hope to see as many of you there as can possibly come. Thank you.

PRESIDENT KIRKLAND — Thank you, Ed. Well, we'll have a lot of studying to do when this thing comes around, because it is tremendously voluminous.

Now, I want to introduce to you a very good friend of mine and, in fact, a very good friend of a great many of us, the Vice-President and Chief Actuary of my Company, the Prudential, currently the President of the Society of Actuaries, Pearce Shepherd. Pearce, will you say a few words to us?

MR. PEARCE SHEPHERD — Thank you, Harry. I think you can understand that I am delighted to be the one to bring you greetings from our Society of Actuaries this morning.

It has been my good fortune to have worked very closely for

a good many years with your President, Harry Kirkland. In fact, I consider myself one of the fortunate actuaries whose experience includes several years of work in this medico-actuarial field we call underwriting.

You heard from Dr. Hutchinson about some of the highlights of this just published Build and Blood Pressure Study, and you have undoubtedly seen some of the stories in the papers this week by some of the science writers, some of them doing a pretty good job of it and others just writing what they thought was news.

It was a tremendous task to collect, process, and interpret the information going into this study. I think they said there were 35 tons of IBM cards used and collected on it. If my memory from my papermill days serves me right, that's about a small boxcar full of IBM cards.

While primarily a statistical job, it required guidance and help from the insurance medical experts in planning and interpretation. We believe it will help in the underwriting of these characteristics.

We in the actuarial field recognize the shortcomings of such studies, the years that are required for a significant experience to develop, the difficulty of getting statistically sound, homogeneous data and the time to collect, process and interpret the results. These difficulties are not new, but the speed with which our medical knowledge is developing and the constant advancement in medical treatment and procedures tend to limit the value of such studies. Our underwriting rules, more than ever, must lean heavily on clinical medical knowledge, coupled with statistical data as fresh as possible, from whatever source, in order for our companies to carry out their responsibilities fully and effectively. This certainly applies to the life insurance business, but even more to the problems of individual sickness and accident insurance, which is a relatively new field for a good many of us, but a rapidly expanding field.

As I see it, therefore, there is a greater need for close cooperation between doctors and actuaries today than ever before, and your Association and our Society have a lot of work to do.

I know you have a full program that is packed with interesting presentations. Thank you for allowing me a few minutes with you this morning.

PRESIDENT KIRKLAND — Thank you very much, Pearce.

We are very fortunate to have with us Dr. Frank E. Berry, Assistant Secretary of Defense, Department of Defense, Washington. I am sure that Dr. Berry is known to most of you. He received his medical degree from Harvard in 1917, and had an internship and residency at Peter Bent Brigham in Boston. Belaboring the Bellevue theme that you heard, I am proud to say that he was for a time Resident Surgeon at Bellevue Hospital. He is a former Professor of Clinical Surgery at the College of Physicians and Surgeons. He has been Assistant Secretary of Defense (Health and Medical) from January 1954 to date, and has honorary degrees from Hahnemann and Jefferson. He is a Chevalier of the National Order of the Legion of Honor. He served in World Wars I and II, in the latter with the Ninth Evacuation, as Colonel, and was with the Roosevelt Hospital unit in the European Theatre. He is a Brigadier General in the Reserve. He has a great many distinctions that I am not going to go into in detail, but I think it is important for you to know that he is a Diplomate and, actually, a founder member of the American Board of Surgery and of Thoracic Surgery. It gives me great pleasure to introduce to you Dr. Frank Berry.

"WHICH ERRING MEN CALL CHANCE"

J. MILTON: COMUS

FRANK B. BERRY, M. D.

Assistant Secretary of Defense
(Health and Medical)

It is both a pleasure and a privilege to be invited to speak about a subject that concerns all of us so intimately — flying safety. In the June issue of the *Medical Annals of the District of Columbia,*[1] the leading editorial is entitled "The Federal Aviation Agency Medical Program" and the opening statement explains what everybody should be thinking about today:

"Public Safety — its promotion, development, and preservation — is the prime concern of the Federal Aviation Agency as defined by the Federal Aviation Act of 1958 and directed by Administrator E. R. Quesada. This consideration outranks all others, and is the touchstone by which all the projects and programs are tested."

Here is the problem in a nutshell. The editorial then cites the three general areas of activity of the Medical Program of the FAA:

"1. The assessment of physical and mental fitness of applicants to determine their ability to perform the duties of airmen safely;

"2. The medical implication of the agency's mission to promote safety through regulations covering design, construction and performance of aircraft and their components;

"3. The tasks of many FAA employees particularly those concerned with air traffic control (and we might also add all those concerned with maintenance and repair — F.B.B.) are of such nature as to require special attention to working conditions, hours of employment" and protection against injury to themselves mentally or physically, both in control and maintenance of high performance jet aircraft.

Similarly Brigadier General Richard L. Bohannon, USAF MC,

recently quoted a statement of the Commander in Chief, Pacific Air Force:[2]

"Good pilots don't have accidents; poor ones do." This is another way of saying that the greatest single cause of aircraft accidents is human error.

"Many aircraft accidents result from a combination of human errors, committed on the ground as well as in the air. Maintenance errors committed by absent-minded technicians, materiel failures overlooked by inattentive ground crews, and instrument failures ignored by overly-fatigued pilots all represent situations which can be prevented from developing.

"An astute, alert, well motivated flight surgeon, practicing his specialty at base level, can often make a substantial contribution toward the prevention of mistakes by the human in the man-machine complex, for the man is the factor with which the flight surgeon is directly concerned."

As you know, the FAA has had difficulty in obtaining a Medical Director, but finally the position has been filled, and some of the changes in regulations that have been instituted for pilot examinations have caused many protests on the part of the pilots' organization. For example, two recent articles in the *AOPA Pilot* are not exactly complimentary: "Here Come the Medicos Again,"[3] and "Is Superman Coming Back?"[4] Basically, these articles disregard the underlying reasoning behind the effort to strengthen the medical examiner: namely, flying safety which applies to *each and everyone of us*, to the pilots and crews, and to their own families as well as passengers. On the other hand, there is a certain amount of justice in some of the comments in these two articles. A quote from the first:

"All it really adds up to as we see it is that these aviation medicine men have decided the family doc is a bum."***** "There is another new name in this field of hocus-pocus: the Aero Medical Association. It is another manifestation of Medicine's superspecialization and these fellows are really swinging wide these days. They had a convention in California the other day. Typical of what the general aviation community might expect from these experts was the resolution that any pilot *involved in an*

accident or a violation of the rules be subjected to an immediate medical examination!"[3]

The second article, though somewhat more temperate, still shows a lack of complete appreciation of the problems involved:

"Neither the FAA nor the Flight Safety Foundation/CAA report on 'Medical Aspects of Civil Aviation' — which the FAA claims to be following in its so-called medical reforms — offer facts substantiating their claim that a revision of Part 409 of the Regulations is needed, AOPA officials state. AOPA also believes that limiting the pilot examinations to designated physicians would inevitably cast reflections on the ability and integrity of the approximately 224,000 licensed physicians in the United States who do not carry the FAA designated label. FAA officially denies this, claiming that the honesty and ability of the private physician is not involved. It is a matter of FAA being able to give physicians making pilot examinations the proper instruction and supervision, a high official in the Air Surgeon's office told the *Pilot*."[4]

Furthermore, there seems to be some misunderstanding on the seriousness and "accident-proneness" from certain diseases.

I am sure that the FAA is well aware of the need to avoid excess paper work and excessive examinations, which you in insurance realize promote inaccuracy and carelessness because of the mere weight of paper and the number of questions involved.

To continue with the criticisms contained in these two articles, I take sharp issue with the objection raised to the specialty of Aviation Medicine and to the assumption that all of our 224,000 doctors are equally qualified as medical examiners for aviation. The pressure on the busy general practitioner is great. Frequently, he can certify family conditions only up to a point. Too often, he is over sympathetic with his patient and will either not tell him of an existing defect, or will pass him saying "Oh, that's nothing. You can handle that and I think you will be all right. Sure, you're a good enough risk." The family doctor, quite naturally, may know little of aviation and its stresses. You in the insurance business face exactly the same problem and that is why you deal first with the general practitioners, and second with your own group of examiners employed and paid by you on full time

basis or as qualified consultants with extra pay! They will be objective, will consult with the family physician, and where there is the slightest doubt will give an objective and experienced report mindful of the problems involved on both sides of the coin. An identical situation exists in compensation work and, in many of our states, special approval and rating are required for registration of doctors in compensation practice. Furthermore, these doctors are limited in approval as to the type of compensation practice. Such exists in New York and, for a number of years, I was a member of the Advisory Board to the State Society which recommended approval or disapproval of those applying for rating in surgery and its specialties. Is it too much to ask that our aviation groups should accept a similar arrangement?

In 1956, in the Louis H. Bauer Lecture at the Aero Medical Association, I discussed accident prevention from the standpoint of human error.[5] Certain it is that, today, the rate of accidents as against number of miles flown and the morbidity rate per passenger has decreased steadily. Of course, if you're dead, it's 100 per cent. Yet with the demand to go ever faster, and with our commercial planes carrying larger numbers, the fatality rate per accident has increased considerably so that, today, our chance of surviving an accident in a modern plane is far less than it was formerly and infinitely less than it is when other means of travel are used. This fact is borne out by the statement of Christy, reporting on the experience of the United States Navy at the last (AGARD) meeting of 1959, with speed below 400 knots, 90 per cent of the pilots survive following ejection, whereas, with speed above 500 knots, only 55 per cent survive.[6] Still more comparable is the fact that since 1947, the Air Force has reduced its total of major accidents by more than 75 per cent; yet, in the same period of time, the percentage of pilot fatalities to major accidents has increased from 17 to almost 30 per cent. Due to the higher performance of equipment, if a pilot is involved in an accident, the chances are almost doubled that he will die. The same principle would apply to passengers.[7]

Despite the fact that the airline fatal accident rate trend (per passenger mile) was generally downward, more people were killed and injured in 1955 than the average for the preceding 20 year period. This increase, is, in part, due to the ever increas-

ing passenger capacity in our current aircraft. With the advent of the new jet transports the injury and fatality rate in one serious accident will exceed even our present rate, particularly when we consider the normal flying capacity of those planes.

Only recently, an official representative of one of our large aircraft manufacturing concerns told me that their airplanes were "accident-proof and fool-proof" yet, within the next week the story appeared that these planes, our most modern type of jet aircraft, were having trouble with landing gears, necessitating careful rechecking and overhaul. Moreover, since the first of this year, there have been several other accidents involving new jet transports. These accidents were not limited to any one type of plane. There was a serious dive of 29,000 feet of a plane with a full load of passengers over the Atlantic earlier in the year. This was caused by the failure of an automatic pilot, but failure to recognize change of altitude by the pilots was another factor. Each received a penalty after thorough investigation of the accident. Must we repeat again and again that wherever a mechanical device is employed, there is always the possibility of its failure, just as there is always the possibility of human error? The altimeter was questioned in another accident. There had been partial loss of cabin pressure at higher altitudes in several instances. In one of these, this was due to accidental shutting off of the pressure system by a crew member. In two instances, it was discovered that the passenger oxygen equipment was defective and, incidentally, the instruction given to passengers on the one transatlantic flight I have made in an airline jet was certainly very scant.

Recent work by the Royal Canadian Air Force has demonstrated how vital is an adequate oxygen supply in case of sudden loss of cabin pressure — explosive decompression — and the very short space of time, — *seconds,* that would be available with altitudes over 35,000 feet for adjustment of oxygen masks. The passengers may vary both in age, from the baby in arms to over ninety, and also in health. All expect a safe trip and are completely untrained in emergency safety measures.

A thorough accident prevention program is one of the greatest deterrents to future accidents and investigation aimed at finding

the specific causes of injury in accidents can prevent the recurrence of such injuries in future accidents caused by failure of materials, engineering design and the human element. With the United States Air Force "all major accidents are investigated by an Aircraft Accident Investigation Board with a minimum number of four members: a pilot, a maintenance representative, an accident investigator and a flight surgeon. Other appropriate members may be added as deemed necessary."[8] In the experience of Great Britain, Canada and the United States it is important that a trained pathologist be added to this Board. This requirement was recognized by the USAF several years ago. His contribution is invaluable, "including a consideration of (I) environmental factors, (II) traumatic factors, (III) pre-existing disease."[8] He should visit the site of the accident with the flight surgeon to examine for himself the situation at hand. Careful measurements and photographs should be taken. Thorough postmortem examination should be made and tissues saved for histological or toxicological studies. We know that the existing *"multiple injuries extreme"* diagnoses will decrease in frequency as more pertinent and correct information is obtained by such a trained pathologist. We now have a Joint Committee on Aviation Pathology, the membership of which comprises representatives from the three countries already mentioned.

In October 1956, the U. S. Air Force emphasized the necessity for pilots to keep close check on cabin pressure. Pilots with oxygen masks in place and operating at the time of such explosive decompression are in much better position for recovery and lack of initial shock than those unprotected. An accident occurred in a B-36 with 14 crew members which had been cruising at 41,000 feet with a cabin pressure of 10,000 feet, but at the time only the pilot and co-pilot were using oxygen with their masks in place. The pressure was suddenly lost with the result that, of the remaining crew members, seven became unconscious as a result of oxygen lack before safe altitude was reached.[9]

Again, the Canadian Air Force has shown that in non-pressurized planes, or when decompression occurs at high altitudes, cabin altitude usually exceeds that of the ambient air, with the excess varying directly with the altitude and speed of the plane. Although our jet transport planes are now traveling at an altitude

between 30 and 35,000 feet, there is talk of boosting the range up to 40,000 feet at which point the difference between cabin and ambient pressures spreads more sharply.[10]

In *Fortune,* April 1959, Robert Sheehan wrote an article, entitled, "What's Eating the Airline Pilots?"[11] from which I quote:

"The captain pilot is invested with a command authority. If in his judgment the plane shouldn't be taken aloft, it doesn't go and in flight he is responsible for more than $1,000,000 worth of company property and the safety of several score of lives. But after he climbs out of the cockpit, nobody asks for his opinion about anything much."

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"The modern pilot is usually a college graduate. Some are successful businessmen on the side and not a few have made outstanding contributions to aviation technology." He further points out that the Pilots' Association itself has many committees at work constantly doing research on new equipment, facilities, traffic control and safety devices and these activities constitute a genuine public service. An extensive insurance program, initiated by the Pilots' Association, enables them to obtain moderate cost group life insurance, disability insurance and loss of license insurance. Retirement programs now written into most contracts enable a man who works for 35 years, at an average of $12,000 a year, — which is, of course, a very old-fashioned figure nowdays — to retire at the age 60 with an income of $10,000 a year.[11]

Seniority is inflexible and limited to the airline by which the pilot is employed. This seniority determines all promotions and vacations, forced furloughs and so forth. When a vacancy occurs, it will go to the most senior pilot who desires it. A most thoughtful letter was written in reply to this *Fortune* article by William Karraker, a Captain of Pan American Airways:

"Much of today's hostility between airline management and pilots can be traced to attitudes and regulations that were established more than a generation ago and that do not correspond to today's conditions and today's pilot.

"It is not generally known that an airline captain hardly ever makes successive trips with the same crew. He is like an office manager, who, at the beginning of each week, finds himself faced

with a completely new group of stenographers and clerks. Further, aircraft are staffed with members of three separate departments, which people also belong to three separate unions. The disintegrated effects are such that the separate departments and unions become the prime loyalty targets and public services and success of the airline industry suffer."[12]

In another letter from Clarence Sayen, President of the Airlines Pilots' Association, there is this:

"Your recent article has provoked considerable discussion among our membership, some good, some bad. It has been thought provoking and I haven't heard anyone say it wasn't an honest attempt to analyze the problem."[13]

Besides not flying with the same crew, a pilot frequently shifts planes and over a weekend, when the traffic is heavy, he may fly a large propeller type, a turbo-prop, or a jet, all with different landing rates of descent and take-off speed, and all with varied instrument arrangements, and hence different reactions necessary for all. The strain here falls most heavily on the intermediate group of pilots; since, due to seniority, the most senior have the right to limit themselves to one type of plane. The next group then has a choice of which planes to fly, as on the crowded weekend schedules, for example. From the airlines' standpoint, this creates an undesirable yet unavoidable situation; unfortunately economic factors play a significant part because of the pressures on the pilot and also the constant economic pressures on the airlines themselves. As an Air Force Flight Safety Officer comments, "a modern jet is not just another plane."

What we should all consider as the number one problem is "public safety, its promotion, development and preservation." Captain Karraker recognizes this. The structure, as it now exists, encourages divided responsibilities. Where does the loyalty lie? Certainly, the pilot and crew should be as interested in their own safety as in those of their passengers, and coupled with this naturally the desire to protect one's family, whether the families be flying with the pilot and crew, or at home.

I am sure the thoughtful pilots, engineers, and navigators would be the first to admit that Medicine has been of inestimable value in the development both of 1.) safety measures and 2.) in

preservation of the health and peace of mind of the crew members. The first has been brought about through the creation of human factors teams which work with the engineers in the development of newer type aircraft and in analyses of accidents. From the standpoint of medical care and examination, I believe a graduated system will perhaps prove most satisfactory. The conscientious family doctor is invaluable. He knows the family and its problems. He is not infallible, however, and may be pressed for work or under undue pressures or sympathies from the family. He may know little, however, of the problems and stresses peculiar to aviation. Therefore, there should be physicians and surgeons in full time employ of our large commercial airlines or certified by them as qualified examiners. These should be thoroughly versed in the problems of aviation medicine and should act both as consultants for the airlines and as friends to the crews.

Certain it is that those with insulin controlled diabetes, those who have had coronary episodes or evidence by electrocardiogram of moderate or serious myocardial damage, epileptic seizures, or psychotic episodes in the past, are obviously not as good risks as those who have never had such history. This has recently been covered in the new Certification Procedures of the FAA. The same will apply to those who are grossly overweight, less so with active uncontrolled peptic ulcer or ulcerative colitis. This is the group where such a full time consultant system is of especial value in protecting not only the patient himself, but also his airlines, his family and the public, as they entrust themselves to his care. In line with the above, it should be realized that the established physical standards are minimum and throughout the working period of the pilot they must be maintained. They are not as complete, for instance, as the standards established for interstate truck drivers, which require periodic serology and chest x-ray. Furthermore only 6 of our 35 scheduled commercial airlines have established medical departments. There are two reasons for this: the first is the expense in view of ever increasing and heavy costs, and the second is that, in some instances, the airlines regard a medical department as non-income producing. They are, therefore, heavily dependent upon a capable and honest medical profession.

I might refer for a moment to the word "honest" — when a doctor certifies a pilot as fit, he should realize that he is not only enabling him to continue his work but he is also certifying that an uncounted number of fellow human beings, as well as responsibility for expensive equipment, may be safely entrusted to the pilot's care. Incidents have been reported where identical blood pressures for a number of pilots have been recorded by an examining physician, and also where an honest pilot has been reportedly offered a good electrocardiographic report for a price. The great majority in the medical profession have no tolerance with such practices, but it is this small group of basically dishonest physicians who constantly bring discredit upon the whole.

As to aging, there is always an aging process; this applies particularly to quickness of reflexes and acuity of hearing and vision, as in distance accommodation and in decreased night vision, best illustrated by the increasing dislike for night driving by almost everybody as he grows older. Chronological age *per se* is not an automatic indicator of efficiency. The physiological or functional age varies with the individual.

Although certain compensations take place as one grows older, yet "the implications of aging for length of service are greater for airmen than for most other occupational groups because of the very exacting demands on their aptitudes and capacities. Pilots should maintain a high degree of flexibility, skill and fitness in order to adapt to new types of equipment and to a wide variety of schedules. Unless technological improvements reduce, or larger crews distribute, the load on each airman in flight, the strain on the older pilots may be increased and their useful lives shortened. An early retirement results in a loss of income to the pilots at a time when most individuals are at the peak of their earning capacity. There are also implications for management; the most important is that the large initial expense involved in training the airmen must be depreciated over a shorter period of time. Another is that safety records might be improved by relying more on the judgment and experience of older pilots."[14] This was quoted from Ross McFarland, School of Public Health, Harvard, who has been interested in this whole subject for years.

Then there is the question as to whether or not the pilots form a group who are exceptionally fit. Studies have been made which show that the incidence of physical disabilities among senior pilots is no greater than in those in any similar age group. Conversely, however, no study has yet been made to demonstrate that their infirmities due to aging are any less.[15]

The commercial airlines have adopted different age limits for retirement: the most common is to use age 60. Compromises have been suggested such as the small group of command pilots "whose duties will be strategic planning and advisory" rather than actual operation and the chief difficulty here is in dual and conflicting responsibilities.[14] Perhaps a better plan would be to consider how the training of the aging pilot can best be utilized after retirement without loss of salary. In any event, there should be extraordinarily thorough physical and psychological evaluations for those over the age of 50, with plan for probable retirement from actual pilot responsibilities about 10 years later. Through such annual evaluations, those who exhibit signs of decreased physical capacity or "slowing up" may be placed in less responsible positions. Admittedly, one's reactions slow as one grows older, and as we encounter the principle of the prerogatives of seniority, we should face the problem frankly, with corrective provisions which will prevent the bad and yet preserve the good in such a system.

The problem of alcohol, drugs, etc., enters prominently into the lives of all. Here the family physician, combined with the medical department of the airline, is of inestimable value. The question of a "nightcap" just before retiring, a sedative or hypnotic, and nowadays the ever present and increasing number of tranquilizers is of increasing importance. These and the person who is dependent upon a narcotic, often on the original advice of a physician for some definite physical ailment, must be considered. All are false crutches and assume increasing importance as protectives to compensate for what a man recognizes as his own increasing frailties; or as an escape mechanism in the face of aging, incompetence, or family or financial difficulties. The same might also be applied to the chain smoker of cigarettes who then compensates for his increased nervousness and irritability by regular doses of tranquilizers. And yet, these tran-

quilizers are not as harmless as many advertisements would have us believe. For example, in a recent number of one of our most reputable medical journals there were extensive advertisements for a new psychoactive agent. A diagram showed action both upon the brain and the liver and in small print, telling about administration dosage and caution, and so forth, were warnings against the use of this drug with other drugs, the fact that reversible red-green color effect had been reported together with blurring of vision, and the final warning that liver tests must be performed regularly. Tranquilizers are not uniform in their effects and it is important that every patient taking them should first be under some medical observation in order to ascertain the side effects, if any. Alcohol and drugs can not be laughed off as harmless and are of especial concern from the standpoint of the passengers and their trust in the members of the crew.

Conversely, the amount of alcohol available to the passengers on many planes is of equal concern to members of the crew, as has been recently noted by Inez Robb in the *Birmingham* (Alabama) *Post Herald,* in an article entitled "Alcohol on Planes."[16] The noisy and obstreperous passenger with too much alcohol is not only a nuisance and annoyance to the passengers but also of great concern and worry to the crew and, eventually, one or even more members of the crew may be called upon to handle him. In order to prevent each airline from trying to outdo the other in vying for the patronage of the public, uniform alcohol rules should be formulated by the FAA and strictly enforced: whether there should be no alcohol at all, limit on the amount served, or decision left with the Captain. Certain it is that those obviously under the influence of alcohol at the time of boarding an aircraft should not be allowed aboard. Strict enforcement of such a rule would soon eliminate the few such occurrences as now exist. In a plane, one cannot pass from one car to another as in a railroad train, nor pull off to the side of the road; and there is even more reason for prohibiting such excesses than there is for smoking cigars and pipes.

CONCLUSIONS

It is evident that "the increasing performances of modern air-

craft give to flight safety a more and more important role in the responsibilities of the authorities concerned. In spite of the improvements and aeronautical techniques, the human element is still an essential feature in the operation of an aircraft and the origin of aircraft accidents."[17] The greater the efforts for prevention for humans, appliances and structure, the less there will be "which erring men call chance."

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PRESIDENT KIRKLAND — Thank you very much, Dr. Berry. I think this has been a most timely talk. I think we all are most interested in what Dr. Berry had to say, for quite a number of reasons, including the fact that most of us do a great amount of flying. I think it is of great importance for the future, with respect to insurance considerations. We are very grateful to you, Dr. Berry, for having been with us.

As far as our next speaker is concerned, I feel very much as I would feel if I were ever in the situation of introducing the President of the United States. I never will be in such a position. Nevertheless, I'm sure that all I would do would be to stand up and say, "Gentlemen, the President." I am almost tempted to do that with Dr. Orr, but I'll just tell you a few things about his career and then turn the meeting over to him.

Dr. Orr was born in Georgia, his family being descended from a Revolutionary patriot. He has a medical degree secured from Emory in 1924. His internship and residency were in Boston and Cleveland. From 1927 on, he has been in the active practice of urology in Orlando. In World War II, he was a Colonel in the Army Medical Corps, and was Commanding Officer of the 15th Hospital Center in the European Theatre. Dr. Orr received many honors, both from the United States and Great Britain, during and after the War. As you know, prior to his election to the Presidency of the American Medical Association last June, he had a long and distinguished career within the structure of the AMA.

Just as a little personal note, I had the good fortune to serve under Colonel Orr in southwest England for a period during the war, and, although I have not seen very much of him since that time, I have followed his career with great interest, and it is a great personal pleasure to me to have this opportunity for a reunion.

DR. LOUIS M. ORR — The first thing I want to say is a rather needless comment; that is, to tell you how pleased I am to be with you.

Before I begin, I would like to tell you of a recent trip I took. My wife and I have just returned from Brazil. I was invited by the people in Uruguay to represent the World

Medical Association, and then I received an invitation to attend the Second Brazilian Medical Congress, the second in their history. They have been organized as a medical group for a period of only seven years.

Little did I realize, when I arrived in Belo Horizonte, I would find there, as a guest of the Brazilian government, the Deputy Minister of Health of Great Britain. I thought this a rather significant occurrence. Obviously, the Brazilian government was interested in establishing a counterpart of the British system of national compulsory health insurance by, of course, compulsory taxation.

We were given one day each. The British gentleman, unfortunately, wore a monocle. Unfortunately, he had 27 pages in his paper. Unfortunately, he did not adhere to his text, and he began to ramble. I, having the second day, had a little edge on him by the time Friday came around. I was fortunate enough to have in my hands the new film on sepsis, which, of course, got the audience in a good humor. From there on out I sold commercial voluntary health insurance and Blue Shield and Blue Cross, and I did it for two hours.

Now, the results of this, I do not know, because the Brazilians begin all their meetings by having workshops, and, of course, being people who have no regard for time or date, some of the workshop people were arriving three days late. But they decided, after hearing these discussions by the Britisher and myself, that they would keep their meeting going an extra day and they would formulate some conclusions.

However, I can say to you gentlemen that at the Governor's reception — although he speaks in Portuguese, he spoke to me through an interpreter — he said to me that he felt that the American system was far better than that offered by England, and that pleased me very much.

To show you how these people work, the last festive occasion was on Saturday evening at the Automobile Club, and I know of no room in New York that could possibly compare with the beautiful banquet hall of the Automobile Club at Belo Horizonte, a city of over a hundred thousand people.

The banquet was supposed to begin at nine o'clock. Well,

that means nothing to them at all. At ten of ten, we were once again taken down the line to meet the Governor, in the Automobile Club. At about ten after ten, we had our first course, and at about twelve-fifteen the next morning, the dinner was over, and a loudspeaker suddenly blared forth the announcement that the House of Delegates would reconvene at the hotel for futher work. At three-thirty in the morning, they were still at it. That's the way they operate there.

"UNCLE SAM WITH A STETHOSCOPE"

LOUIS M. ORR, M. D.
Orlando, Florida
President, American Medical Association

As you can guess from the title of my address — "Uncle Sam With a Stethoscope" — I am not here today to read a scientific paper.

When Dr. Kirkland, over a year ago, invited me to speak today, he asked me to discuss medico-economic issues which will be confronting us as we approach the critical election year of 1960. That is what I shall try to do — first, by tracing briefly some of the background developments of the past 10 years, and then by concentrating on what I consider *the* major issue facing medicine and insurance in the immediate future.

In discussing the growing threat of government expansion in the field of health services, I want to emphasize that I am addressing you both as fellow physicians and representatives of a great free-enterprise industry. In your dual capacities as medical men and executives of life insurance companies — many of which are active in the health insurance field — you can exert important influence for cooperative, positive effort by medicine and insurance.

During the past 10 years, modern medicine has become more and more deeply involved in all the cross-currents of public interest, public opinion and political action. The American people have become greatly interested not only in the scientific advances of medicine but also in the methods of organizing, providing and financing hospital and medical services.

On the sidelines, politicians and planners of various stripes have latched onto medical issues, some with a sincere desire to solve problems, others with both eyes on the ballot box or an ideological goal. During the same period of time we have seen one large, clear issue give way to a multitude of smaller, more confusing issues.

Late in 1948 and early 1949, the medical profession was facing

up to a major threat in the United States Congress. After the 1948 elections, it had become apparent that the Truman Administration intended to push strongly for enactment of national compulsory health insurance. So, in January 1949, the American Medical Association, representing the entire medical profession, began its National Education Campaign to defeat that proposed legislation.

The threat was obvious; the issue was clear-cut, and the battle lines were drawn. The question was whether the American people wanted a form of socialized medicine for the bulk of the population. Except for a very small minority, the medical profession closed ranks and presented a united front. The great majority of physicians made an effort to study the issue and cooperate in the grass roots campaign. As a result, under the leadership and guidance of the A.M.A., they rallied a tremendous amount of public support for medicine's case.

From 1949 through 1952, the members of Congress could see clearly from the upsurge of public opinion that the people did not want national compulsory health insurance, or any other form of socialized medicine. The proposal never emerged from committee, and, in the 1950 Congressional elections, a sizeable number of its most outspoken supporters were defeated for re-election.

It is important to remember that one of our most powerful arguments against compulsory health insurance was the positive alternative of voluntary health insurance. Approximately half of the campaign effort was aimed at telling the story of the growth, availability and future promise of the voluntary plans.

Another important point to remember is the fact that even before the National Education Campaign ended in 1952, the proponents of national health legislation began to switch their strategy and tactics. Perceiving that a frontal attack could not succeed, they switched to the more subtle strategy of flank attacks and infiltration. They adopted the "piecemeal" approach and began to split up the so-called omnibus health program into separate bills. Even before our campaign ended, Oscar Ewing proposed Social Security hospital benefits for people over 65, and the first efforts were made to enact the waiver of premium for disabled persons covered by the Social Security program. Other

bills began to crop up on such subjects as federal aid to medical schools, disability benefits and various types of expanded government health activities.

At that time, the American Medical Association was already warning the profession to beware of the changed tactics by the social planners and their political spokesmen. The A.M.A. urged physicians to remain alert and vigilant to these various side-door and back-door proposals, and to push ahead on the state and local level for positive solutions of all socio-economic problems which might provide ammunition for the socializers.

Unfortunately, the profession, as a whole, tended to relax following the success of the fight against national compulsory health insurance. Even after the 1950 Congressional elections, before our campaign was over, many physicians got the feeling that the battle was all won. However, over the past five years or more the social planners, their political spokesmen and their supporters have not been relaxing. With far too much success, they have been increasing their efforts to enact various "fringe" proposals — each one of which then serves as a precedent or stepping-off point for still another proposal. The ultimate objective is the full package of the welfare state, including a government-controlled medical system.

From 1944 through 1953, the Congress did not enact a single bill which was opposed by organized medicine, and it adopted numerous measures which received our support. Since 1953, despite the high level of prosperity and the existence of a conservative administration in Washington, we have seen the passage of more medically undesirable legislation than in any other comparable period. Every year, the number and variety of bills involving medicine continues to increase. During the 85th Congress, that number went over 700.

Here is a brief review of some of the legislation and other developments which medicine has viewed with concern. In 1954, for example, Congress passed the waiver of premium measure to protect the Social Security of persons who became disabled and unable to earn a living. In opposing this plan the A.M.A. argued, among other things, that there were better alternatives not involving medical determination, and that the

waiver of premium provision would simply be used as a preliminary to a disability benefits program.

We did not have to wait long for our prediction to come true. The very next year, 1955, the House of Representatives — without holding public committee hearings and with only limited debate on the House floor — jammed through a bill providing the payment of Social Security benefits at age 50 to persons adjudged to be permanently and totally disabled in relation to their ability to work. The Senate postponed consideration of this bill until 1956, which, of course, was to be an election year.

The A.M.A. immediately alerted the profession and initiated an educational program. Because of the public relations aspects of this problem, the educational program was directed at physicians rather than the general public. An impressive array of well-qualified witnesses presented medicine's case to the Senate Finance Committee. Among the many medical, social and economic arguments employed, the A.M.A. witnesses again pointed out that the disability benefits program would be a precedent for still further expansions of the Social Security system and they urged a thorough, impartial study of that system. The Senate Finance Committee disapproved the bill, but, when it was brought up on the Senate floor, it passed by the narrowest of margins, with the surprising aid of election-year votes from a few supposedly conservative Senators.

And, of course, since then, we have seen just what was expected — a rash of new proposals to lower or eliminate the age 50 requirement for disability benefits, to establish a program of temporary disability benefits, and so on, *ad infinitum.*

The year 1956 also brought enactment of the Medicare program to provide government-financed hospital and medical care for the dependents of servicemen in the armed forces. The American Medical Association did not oppose that legislation because it felt that Congress had the prerogative of deciding whether or not such benefits were necessary and proper. The A.M.A. did emphasize, however, that any such program should try to ***maximize*** the amount of care in ***private*** facilities and ***minimize*** the care in ***military*** facilities. Unfortunately, recent trends have been in just the opposite direction, and are causing increased concern.

There is another type of problem which we face. This kind involves not new legislation, but rather the subtle, steady expansion of a program already in operation under existing laws and regulations. The major example of this, of course, is the tremendous expansion of the Veterans Administration hospital and medical care program since 1945. We now have over 22 million veterans, and each year around half a million are admitted and discharged in V.A. hospitals. Between 80 and 85 per cent of those discharged each year are patients with non-service-connected disabilities. On any given day, close to two-thirds of the V.A. hospital beds are occupied by non-service-connected cases. Our veteran population is aging, and the cost of the V.A. medical program is constantly increasing.

The American Medical Association believes that V.A. hospital and medical care should be limited to veterans whose disabilities were caused or aggravated by their military service. However, as long as the present law exists, the A.M.A. also believes that preference should be given to a veteran whose illness constitutes real economic hardship. This whole problem of Veterans' medical care is a vital part of the basic issue of government largesse versus private initiative. It is still unresolved, but it is going to require some vigorous educational effort by the medical profession in the near future.

So much for those examples of recent issues. We might think of them as the visible portion of an iceberg — as merely the surface signs of a vast, unseen trend toward increased governmental health activities. How about the present situation? What do we face today? Despite the great current concern over earth satellites, ballistic missiles, defense spending, economic conditions and scientific education, we must be alert to all possibilities. In an election year, when the members of Congress can be extremely erratic and unpredictable, we must be ready for anything.

Most of you know, I am sure, that the Forand Bill, which was first introduced in 1957, is being considered by the 86th Congress. This legislation would provide certain hospital, surgical, nursing home and dental benefits to persons receiving Social Security retirement and survivorship payments. The same idea,

with numerous variations in benefits and eligibility, will be appearing in many other bills and amendments.

The real issue is not the specific provisions of the Forand Bill, but rather the basic principle involved. Any Forand-type legislation would raise the same danger. It would add *service* benefits to a Social Security program which, so far, has been limited to cash payments based on the "floor-of-protection" concept.

This new principle, as you know, would alter the nature of the Social Security program. It would pave the way for evolution of a system of tax-paid health care for the entire population. Every two years — in the even years of federal elections — the push for amendment and expansion would be under way. The continuing trend would first undermine, and eventually destroy, our system of voluntary health insurance and the private practice of medicine.

No action was taken on the Forand proposal during the first session of the 86th Congress. However, it will carry over into the second session. And next year may be a different story. Because of its political appeal, this issue may very well assume "top priority" status in the presidential election year of 1960.

From the *defensive* standpoint, we must be alert to the strategy and tactics which probably will be employed next year by backers of the Forand Bill. For example, we should keep in mind these possibilities:

They will be ready to accept compromises that will water down the bill.

They are chiefly interested in establishing a *precedent*, no matter how small, for government-financed health care of the aged.

By using the tactics of "divide and conquer," they will try to prevent the American Medical Association from establishing a united front with the insurance industry, the Blue Plans and the American Hospital Association.

To disarm physicians, and lessen the intensity of their opposition, the bill may be amended to cover only hospital and nursing home care.

Every effort will be made to dilute the plan so as to make

it more palatable to the hospitals. This strategy may include the suggestion that Blue Cross serve as the fiscal agent for any Social Security hospitalization plan.

To disarm those who are concerned over the potential cost of the Forand Bill, the age of eligibility may be raised to 70 as a starter.

If strong opposition to the bill develops, these and possibly other politically expedient changes will be made before it reaches a final vote next year.

This different approach will be more dangerous than any outright attempt to pass the Forand Bill as it now stands. A compromise proposal would *appear* to be harmless, and would not open the gate quite so wide right at the start, but it would lead to the same eventualities.

To counter this approach, we must establish and maintain a united front of physicians, hospitals, insurance companies, Blue Cross, Blue Shield, and all other groups that would be affected by such legislation. It is especially important for hospital administrators and trustees to realize that any kind of government subsidy, either direct from Washington, or indirect through a fiscal agent, would simply be the first step toward federal controls.

However, we must do much more than just organize a good *defense.* We have to show that medicine and insurance have a better answer than the kind offered by Forand-type legislation. Our objective is not simply to beat an undesirable bill in Congress. Our major goal is to help solve a problem. And this particular problem gives us an opportunity for practical action, a challenge to produce dramatic progress in the growth and development of health insurance coverage for older people.

Of course, definite progress already had been made before Mr. Forand emerged on the scene with his version of an old idea. As of 1958, some 43 per cent of the people over 65 had some form of health insurance protection. Many encouraging activities and trends have been taking shape during the past few years.

For example, the number of persons over 65 covered by voluntary health insurance has been increasing at a greater rate than the total number of persons reaching age 65.

Coverage for persons now over 65 has been more widely

available than generally recognized, but until recently it has not been "pushed" hard enough by most insurance companies and prepayment plans.

Continuation of coverage after retirement carried during working years is extending rapidly.

The principle of paid-up policies at 65 is still in the experimental stage, but despite the problems there are several possible ways in which this might be accomplished.

For the past year or more, both the Blue Shield Plans and the Health Insurance Association of America have had special committees actively studying means of expanding coverage for older persons. The latter organization, as most of you know, has been urging member companies to offer policies that are guaranteed renewable for life, individual and family coverage for persons already over 65, group coverage that will continue after retirement, and group contracts providing the right to convert to individual coverage when employment is terminated.

To help stimulate all these developments, the House of Delegates of the American Medical Association, last December, adopted a proposal which applies specifically to the population group over 65 with very modest resources or low family income. For medical services rendered to this particular group, physicians are urged to accept a level of compensation that will permit the development of insurance and prepayment plans at a reduced premium rate.

Needless to say, the A.M.A. is urging all state and county medical societies to implement that policy of adjusted fees with the utmost speed and vigor. Early this year, the Blue Shield Plans developed a model insurance contract for persons over 65, incorporating the principle of the A.M.A. policy action.

By August, when we testified before the Senate Sub-Committee on Problems of the Aged and Aging, we were able to report that 25 Blue Shield plans in 23 states now enroll persons over 65. In practically all of the other states, medical societies and Blue Shield plans are working out special new programs for the aged. It also was reported that *all* Blue Shield plans now permit those over 65 to continue their coverage.

In addition, the commercial insurance companies have been

making excellent progress during the past year. An increasing number of companies, including many of you represented here today, either have announced new, specially tailored policies for the aged, or you have extended existing policies to more and more states.

We can say with truth and confidence that health insurance coverage for the aged will grow at an accelerated pace in the months ahead. In a conservative estimate based on trends of the recent past, the Health Insurance Association of America predicted earlier this year that 60 per cent of the senior citizens who want it or need it will have protection by the end of 1960. Their further estimates are 75 per cent by 1965, and 90 per cent by 1970. Actually, however, because of the intense interest and activity now centering on this problem, the rate of growth might far exceed those conservative predictions, if medicine and insurance will cooperate in a valiant, all-out effort.

During the next nine months or so, many people, including the members of Congress, will be paying close attention to the over-all problems of aging and the aged. While health insurance coverage for older people is only one phase of this broad subject, it is — from a timely, practical standpoint — the most urgent field of activity.

In my opinion, the medical profession, the prepayment plans and the insurance companies must concentrate, in the months ahead, on the development of voluntary coverage for the aged. We must promote, advertise and publicize new plans and policies. And we must be able to go before the Congressional committee hearings next spring with a real story to tell — a story of dramatic growth in coverage, new ideas and approaches, and hopeful outlook for future progress.

If we make that kind of effort and if we can present a convincing case to Congress next year, I think we may be able to beat back the advocates of government action. If we do not make that effort, I would hesitate to predict the long-range future of medicine and voluntary health insurance.

I think the most important message I could leave with you today is to urge that medicine and insurance accept the challenge, and capitalize upon the opportunity.

PRESIDENT KIRKLAND — Thank you very much, Dr. Orr. That was food for thought, I would say.

Now, gentlemen, we have a very important paper coming along.

The next item is "The Master '2-Step' Electrocardiographic Test Brought Up to Date," by Dr. Arthur M. Master, Consulting Cardiologist at Mt. Sinai Hospital, New York City.

His introduction is going to be brief for the same reason that Dr. Orr's was brief. All of you know Dr. Master. His medical degree was secured from Cornell in 1921, his early training in Mt. Sinai Hospital. Among other things, he has worked with Sir Thomas Lewis in England. His cardiological appointments are so many and varied that time will not permit listing them. He is Associate Clinical Professor of Medicine at the College of Physicians and Surgeons.

In World War II, he was Captain in the Medical Corps, Chief of Medicine, U.S. Mobile Hospital No. 10, in the Solomon Islands. I am informed reliably that he is the author of three books and 270 articles on cardiac disease and related subjects. He is a Diplomate of the American Board of Internal Medicine and in the subspecialty of cardiovascular disease. I'm going to ask Arthur to bear with me if I'm wrong about those three books and 270 articles. Perhaps, there are a few more; well, it's impressive enough as it stands.

THE MASTER "2-STEP" ELECTROCARDIOGRAPHIC TEST BROUGHT UP TO DATE

ARTHUR M. MASTER, M. D.
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Thank you very much, Dr. Kirkland, and thank you all for the privilege of asking me to appear here today. It is an honor to be on the same program with the distinguished speakers who preceded me — Dr. Louis Orr, President of the American Medical Association and Dr. Frank Berry, famous surgeon and Assistant Secretary of Defense.

I am going to discuss the "2-Step Test" today, as informally as I can. I want to touch on several aspects of this procedure such as its indications, specific values and the technique of its performance. I want also to consider the question of modifications that have been proposed by others from time to time, the value of standardization, and the matter of the supposed "dangers" inherent in the test. I plan to present you with our latest figures on the value and meaning of negative "2-Step Test," as well as to discuss with you our current techniques of interpretation.

In this latter respect, you will see that we have modified, considerably, our technique of analysis of the post exercise tracing which, I hope, will reduce the potential source of error in the "2-Step Test."

I hope you will ask questions because, first, I think this will increase the value of my presentation. By asking questions, one makes many more associations and certain facts are retained more easily. Also, I welcome questions because I have found in the past that I, myself, learn a great deal from the problems of others. As a matter of fact, I am even willing to welcome criticism. Of course, I would prefer that any criticism you may

direct be constructive but, if you want to be destructive, I am sure I will learn something from that, too.

I am going to repeat my important points frequently. Let me assure you that this is not a mark of senility, but rather an established technique of pedagogy which I have always found valuable.

First, let us consider the need for an objective test of cardiac function. Is one necessary at all? From time to time we hear such comments as "Oh, I don't need any test. A detailed history will tell me whether the patient has anginal syndrome due to cardiac disease, or whether his complaints are referable to non-cardiac causes." I don't go along with that, and I am certain that those of you practicing insurance medicine are particularly aware of the unreliability of a history in some cases. You know better than, perhaps, those of us engaged in other branches of medicine, how clever the malingerer can be in simulating complaints of heart disease. I am sure many of you will remember, some years ago, the now famous racket I helped expose which defrauded insurance companies of millions of dollars. I mention this here because in seven claimants sent to me for evaluation, all had negative "2-Step Tests," and this, helped me decide that these particular individuals, in fact, had no basis for their claims of "heart disease."

The insurance industry is not the only area in which the histories may not be entirely reliable. Matters of litigation frequently arise in the courts. There are always those individuals who want to avoid the military service — in short, it is a good thing to have a standard, reliable, objective test of cardiac function.

Another question that may be raised concerns the value of an electrocardiogram recorded at rest. Why subject a patient to exercise in the first place? Are not evidences of abnormality present in the routine 12 lead electrocardiogram? Not necessarily, at all. It is well known that a large percentage of patients with "ischemic" heart disease, and this includes those with the so-called classical anginal syndrome, have normal resting tracings. Paul Wood, in England, has reported that in as many as 70 per cent of cases with clinical manifestations of coronary artery

disease, the electrocardiogram at rest is within normal limits. In our own experience, we have found that some 40 to 50 per cent of individuals with coronary artery disease have perfectly acceptable resting records. So, while it is a good thing to have a normal electrocardiogram, it does not, by any means, rule out the presence of underlying significant impairment of the coronary circulation. We often hear from patients that a friend or relative of theirs after having submitted to a "complete" examination, on the basis of which they were reassured by the physician, subsequently, "died on the doctor's doorstep." I doubt very much if any of these patients were submitted to the "2-Step Test."

Supposing, as is usually the case in clinical practice, that one may depend on the veracity and reliability of the clinical story. Is the mere presence of chest pain enough to permit a diagnosis of coronary artery disease? Is the pain, when present, more often than not, classical? Is angina always related to effort and does it always respond to nitroglycerine? In our own experience, we found that a great majority, though not all of our patients with coronary artery disease, did have complaints referable to the chest. These were not always described as "pain" but also as "choking, sticking, depression, tired feeling" and other subjective manifestations. Even more important, three-fifths of the people who present themselves at our office and who, subsequently, are found to be free from coronary artery disease, also have chest pain. It is by no means always easy to distinguish chest pain on a functional or non-cardiac basis, from that due to an impaired coronary circulation. Gall bladder disease, spinal arthritis, hiatus hernia, intercostal neuralgia, myositis — all these and others may simulate the symptoms of "ischemic" heart disease. Again, true angina is not always precipitated by effort. We have seen many patients who consistently deny any discomfort associated with the usual forms of exertion. Their symptoms may appear only after a specific type of activity — sexual intercourse, walking against cold wind only, or an emotional crisis. It is true that nitroglycerine does relieve angina in many instances, but neurotics may also be so relieved of their symptoms. The pain associated with cholecystitis, dorsal arthritis, and, on occasion, the distress of a hiatus hernia may also be relieved by nitroglycerine.

You see, therefore, that even in the presence of a "reliable" history, such features as pain and its relation to effort, as well as its response to nitroglycerine, may lead one down the garden path. I could enlarge on this by the hour but all this simply serves to emphasize the need for some measurable, reliable, objective test of coronary circulation under stress. I have brought with me today, many slides to illustrate all these points, but time does not permit me to show them all to you.

I would like, now, to give you a little background in the development of the "2-Step Test," as it is currently used. The original procedure, in which blood pressure and pulse response to exercise were measured, was devised by Enid Oppenheimer and Master at Cornell between 1925 and 1929. We found that, in terms of such response, we could determine at what age and at what weight, males and females performed their most efficient work. Our experiments convinced us that the older one gets, the less a given amout of work can be performed with the same efficiency. So, age is one important factor. We also found that weight was important. The optimum weight for women seems to be somewhere around 130 to 140 pounds; for men around 150 to 170 pounds. When these values are exceeded, efficiency declines. After we had accumulated all this data showing the effect of age, weight, and the differences between sexes, we got some help from the mathematicians at Columbia and established our table. In those days, the insurance industry was less available for consultation in these matters than it is today. I daresay that, were we to repeat such an experiment in 1960, we could obtain a valid statistical analysis in a matter of seconds with the use of one of your electronic computers.

You see then, that the original formulation of the work required in the "2-Step Test" was based on the response in terms of fluctuations of blood pressure and pulse. In 1931, Wood and Wolferth, in Philadelphia, suggested that the electrocardiogram might be used to evaluate changes after exercise. Unfortunately, they said in effect, "This is a good thing, but we don't advise you to do it because it is dangerous. It may be used in doubtful cases." Despite this somewhat limited endorsement, they should be given credit for first proposing an electrocardio-

gram after effort. It is Scherf and Goldhammer, however, who have done most of the work and writing on the subject of the post exercise electrocardiogram. We have, perhaps, neglected to refer to their work as often as we should in our own reports. Our failure to do so was not, believe me, out of malice, but rather because we were disappointed by their consistent statements that the amount of exercise performed need not and should not be standardized.

After the original observations by these and other investigators that a post exercise tracing was valuable in the diagnosis of coronary artery disease, we adapted our original "2-Step Test" for this purpose. For years, we accumulated data — all kinds of statistics related to the patients' age, weight, sex and other pertinent factors. We found that what was true in terms of blood pressure response to our standardized exercise test was also, apparently, true in the electrocardiographic tracing recorded after this exercise.

As a result of our increasing experience with the test through the years, we have constantly revised our criteria for interpretation. Our critics suggest that these refinements indicate some weakness in the validity of the procedure. It is difficult to follow this kind of logic. With newer and better instrumentation, with the advent of the direct writer, with the increasing use of precordial leads, we have been able to sharpen the limits of normality and abnormality after the test. As a matter of fact, if you will bear with me, I plan today to tell you about our latest criteria of interpretation devised by Dr. Rosenfeld and myself.

Almost as soon as the usefulness of recording an electrocardiogram after exercise became apparent, there appeared literally scores of modifications of the "2-Step Test." We continue to use our "2-Step" apparatus because we find it practical and almost physiological in the manner in which it calls for the expenditure of energy. Who among us doesn't walk some stairs in a part of his daily activity? Our steps are so constructed that they are only 9 inches high and can be navigated with ease by practically everyone, except, perhaps, the severely crippled. As the patient goes over the "2-Step" platform, he gets an opportunity to turn around and so rest to some extent. The

unit is small, compact and can be placed in the smallest examining room or in the largest insurance company office!

What are some of the modifications that have been introduced as substitutes for this simple "2-Step Test?" These include dumbbell lifting, knee bending, stair climbing, attempting to duplicate the effort that gives the patient pain (you can imagine how embarrassing some of these activities could be), walking the patient on the level until he is exhausted, and some investigators arrange for the patient to have a full meal and *then* do the "2-Step." Others have the subject perform some type of exercise while holding an ice pack in his hand. The ballistocardiographers use the smoking test. Then, of course, there is the step-up test where anything above floor level is used. We have seen patients stepping up and down all types of chairs ranging from a piano stool to a lazy boy lounger. We have seen 12 inch, 16 inch and 20 inch boxes used for this purpose. Except as a form of punishment, there is no advantage to any of these procedures over our standardized test. Furthermore, they may be dangerous for a man with coronary disease.

I would now like to conclude the entire question of standardization of exercise. There are certain obvious advantages to everyone using the same amount of exercise in evaluating a given patient. There is a great deal of evidence to show that the test should be standardized. If a normal individual is exercised to excess, changes may well appear on the electrocardiogram. Yu and Lovelace, in particular, have published reports demonstrating the RS-T depressions resulting from excessive exercise. On the other hand, we have shown repeatedly that submitting a patient to an amount of exercise less than what is called for in our published table, may result in a negative response. Let me show you one or two tracings to demonstrate this point.

(figure 1) This is a man with a severe anginal syndrome. The table calls for 23 trips to be performed in 1½ minutes. You see the abnormally depressed "ischemic" RS-T segment. This is an abnormal response. But, when this same patient performs only 10 trips in the same 1½ minutes, he shows no change at all. Notice, too, that 14 and even 18 trips still result in a negative test. It is only when he does 21 that we begin to see

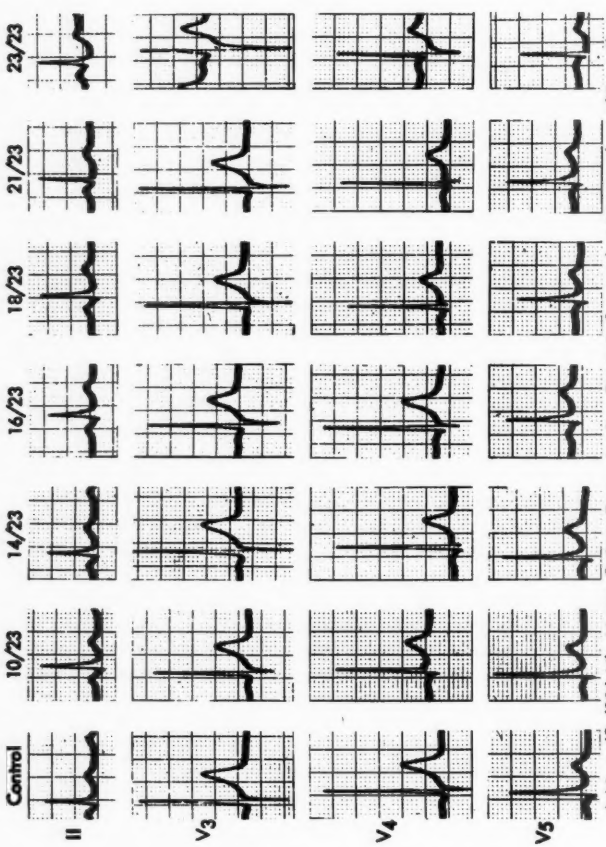

Control
10/23
14/23
16/23
18/23
21/23
23/23
II
V3
V4
V5
A.N. m 42 (384 M) Master 2-Step Test. Angina Pectoris 9 years but improved steadily. Then in June, July, 1956, "partial" 2-Step Tests were performed. The table called for 23 trips in 1 1/2 minutes; this was definitely abnormal. However, 10, 14, 16, 18 & even 21 trips respectively in 1 1/2 minutes were always negative. To conserve space only the electrocardiograms taken immediately after exercise are shown.

Figure 1

a slight indication of abnormality, These are what we call "partial tests," repeated again and again on the same patient. This indicates, to our satisfaction, that the test must be standardized. In a general way then, the electrocardiogram changes after exercise are quantitative so that the more the patient does physically, the more marked the changes.

Standardization is of value in research work. Investigators in different centers, evaluating various drugs and their effect on the electrocardiogram, must have a common base line against which to compare their results.

The next tracing (figure 2) demonstrates some of our early work in the study of iproniazid (Marsilid). As you know, the

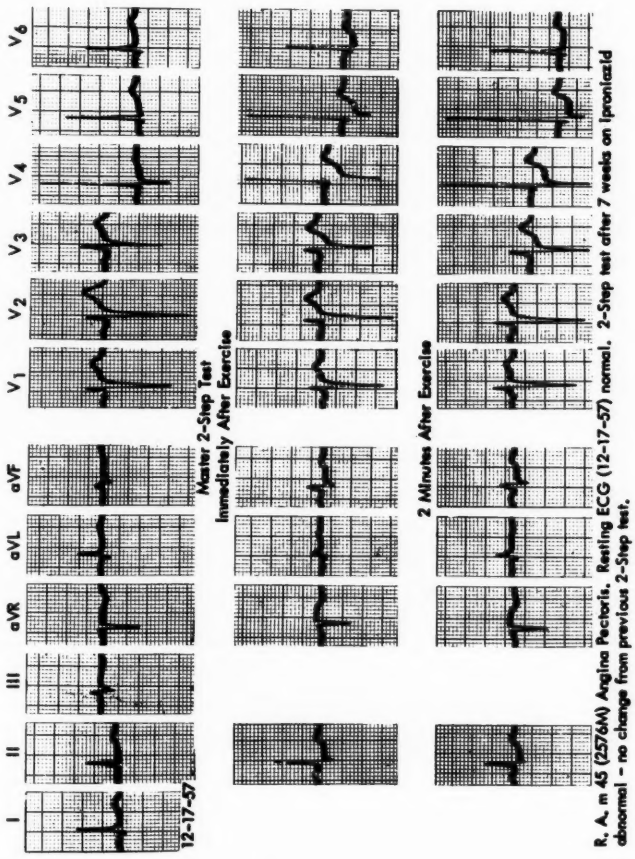


Figure 2

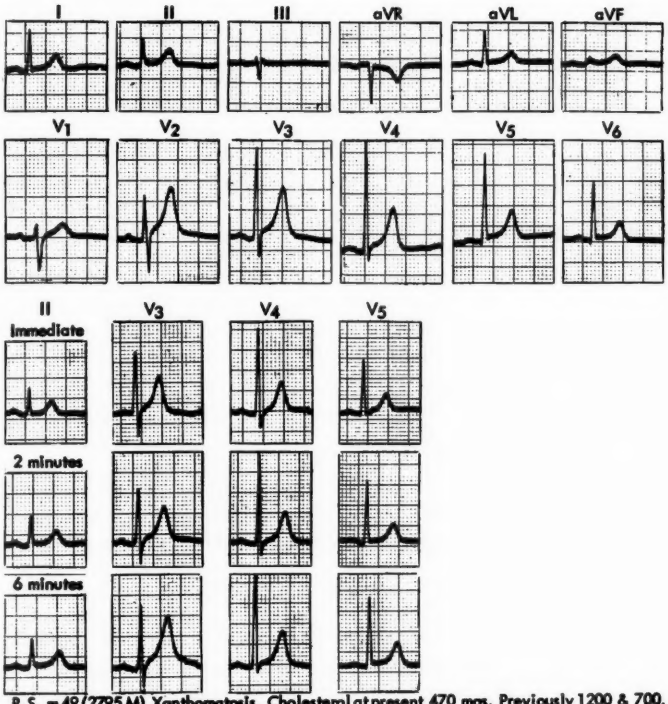
monoamine oxidase inhibitors, of which iproniazid is an early form, may modify the anginal syndrome in an amazing way. We wanted to determine whether this very impressive control of pain was related to an actual improvement in the coronary circulation. Many of the patients to whom Marsilid was administered had normal resting electrocardiograms. However, they had positive "2-Step Tests." In this tracing, you see that the drug did nothing for the electrocardiogram. This patient received the medication for two months and, although he had almost unbelievable freedom from symptoms, his RS-T depressions persisted. This is a good example of how a standardized test lends itself to physiological and pharmacological research.

We have used the "2-Step Test" in evaluating the presence of latent coronary disease in patients whom we believe especially susceptible. This tracing (figure 3) shows the "2-Step Test" in a man with familial hypercholesteremia. He is perfectly well, clinically, and, sure enough, his "2-Step Test" is negative.

In the insurance industry, imagine the chaos were every different office to evaluate the cardiac function of thousands of insurance applicants according to the whim of a particular examiner on a particular day!

What about the statements that the "2-Step" procedure is dangerous? In the many years that the "2-Step" has been done under our supervision, we have not seen a single accident among 50,000 tests. From time to time, however, one hears about a coronary occlusion allegedly following the Master "2-Step Test." I am amused to find that whenever there is some criticism or some danger purportedly resulting from the procedure, it is always called the "Master Test." However, when the results are good and an important piece of information has been obtained from the procedure, my name is not infrequently omitted.

The preoccupation of some people with the potential danger of the "2-Step Test" is, I think, largely a matter of tradition. One report may appear in a textbook and then it is passed along from person to person and from book to book until, by virtue of repetition, it becomes an established fact! We have been interested in tracking down some of these reports. An article appeared in the Journal of the American Medical Association



R.S. m 49 (2795 M) Xanthomatosis. Cholesterol at present 470 mgs. Previously 1200 & 700. However, resting & Master double 2-Step Test electrocardiogram (2/20/56) were normal.

Figure 3

some time ago entitled, "Myocardial Infarction Precipitated by the Master 2-Step Test." The patient in question had been sick most of the night prior to the test. Nitroglycerine had not relieved the pain and morphine had been required! The resting electrocardiogram was obviously abnormal! Under these circumstances, a "2-Step Test" was done and the results were, apparently, disastrous. The best that can be said about the responsible physician is that he did not show much common sense.

Friedberg, in his textbook, publishes an illustration of infarction allegedly following the Master "2-Step Test." Here, again,

the resting electrocardiogram is abnormal and, from the sparse history given, I suspect that the patient was in the premonitory phase of coronary occlusion.

I deliberately refer to these instances in order to emphasize and reemphasize a very important point. If you suspect that a patient is in the impending phase of a coronary occlusion or has, in fact, already recently sustained an attack, it is certainly not wise to do the test. Surely, it is not too much to ask that simple common sense be applied in this area as in others in medicine.

When the test is properly done, when the physician has excluded the presence of an acute process, the procedure is totally innocuous. It is very important to make certain that the patient understands that he must stop at the first indication of any abnormal sensation in his chest. Frequently, patients will develop pain during the "2-Step" procedure and will "grin and bear it." I am sure that our psychiatric colleagues have some profound explanation for this "denial of pain mechanism." We have used an interesting approach in this regard with our own patients. We point out to them, quite validly, that they must stop as soon as any symptoms develop because it is then that objective changes in the electrocardiogram will be maximum. So, in order to get the most revealing results out of this test, we tell them that they must stop the moment they sense any pain or pressure.

Let me repeat, using ordinary common sense, clinical judgment and care, we have not had a single accident in 50,000 procedures, nor have we heard of any accident under such circumstances.

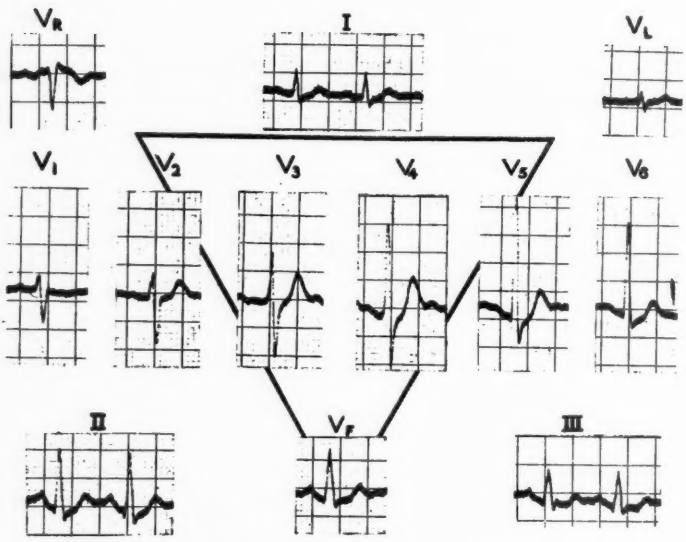
I come now to what is probably the most important aspect of my presentation today, the matter of how to interpret the "2-Step Test." We had, for a long time, believed that any depression of the RS-T segment in excess of 0.5 mm. was abnormal. Our results were quite satisfactory using this basic criterion. We were not troubled to the same extent as were others, by the incidence of false positives. This was so because we never divorced the "2-Step Test" and its interpretation from clinical judgment. So, if for example, we were asked to comment on the significance of ½ mm. depression in an asymptomatic 18 year old girl, we did not mule-headedly say that she had coronary

artery disease simply because there was slight depression of her RS-T segments after exercise. We also made allowances for certain types of individuals in the interpretation of whose "2-Step Test" we were very cautious. Thus, in highly neurotic individuals, in frank psychotics, in those with well defined neurocirculatory asthenia, and in certain asthenic persons with long thin chests, small vertical hearts and a radiologic cardiac configuration of a "broomstick" heart, we may witness S-T segment depressions which we realized were on a functional basis. Persons subject to paroxysmal tachycardia often have a "false positive" test. However, we were cognizant of the fact that the false positive response was troubling many investigators. It was also the source of some concern to those engaged in insurance medicine who did not have the advantage of reliable clinical histories. When competent investigators like Tom Mattingly, at the Walter Reed Hospital in Washington, and Lepeschkin in Vermont, reported a 20 to 25 per cent incident of "false positives" using our criteria, we realized it was time to get busy.

It did not appear to us that the solution lay in increasing the amount of RS-T segment depression before calling a test positive. We found, for example, that if we altered our criteria from ½ mm. to 1 mm., 1½ mm., or 2 mm., as some have suggested, we reduced the incidence of false positives, but we are also permitting large numbers of patients with "ischemic" heart disease to go unrecognized.

Back in 1943, Ashman pointed out for the first time that the *configuration* of the depressed RS-T segment was, perhaps, of greater importance than merely the extent of that depression in the millimeters below the base line. This work lay clinically unapplied for some years until, in 1950, Paul Wood of England again described the various shapes of the RS-T segment. He, in fact, coined the term "ischemic" segment to characterize that flat, horizontal, or frankly sagging RS-T in contradistinction to the benign depression of the junctional portion alone. The next two tracings, (figure 4a and 4b) were published by Wood and demonstrate these different forms of depressed RS-T segments.

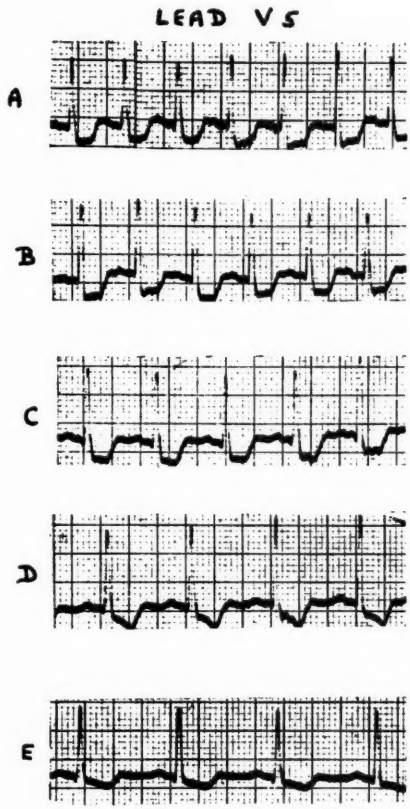
Gordon Myers and Talmers in this country, Evans and



Brit. Heart J. 12:363, 1950. Wood, P. et al.
Normal control, showing depression of the S-T junction from which the S-T segment slopes rapidly upwards to a normal T peak.

Figure 4a

MacRae in Britain, Malhotra and Pathania in India and Feuiltault in Canada, all subsequently reported on the importance of distinguishing "ischemic" RS-T depressions from the "junctional" or false positive types. But there was no statistical validity to any of these reports until the great studies conducted by Colonel Mattingly, in Washington, and George Robb at the Metropolitan, here in New York. On the basis of extensive clinical experience with many hundreds of persons, insurance applicants and military personnel, followed for many years, they



Brit. Heart J. 12:363, 1950. Wood, P. et al. Case of angina pectoris, showing a series of electrocardiographic changes in lead V_5 after effort. (A) and (B) Flat depression of the R-T segment. (C) and (E) Sagging depression. (D) Inversion of the T wave.

Figure 4b

demonstrated that there was a real statistical difference between the "ischemic" RS-T segment and the benign depression of RS-T. According to Mattingly and Robb, any depression of RS-T characterized by an initial horizontal course of 0.08 seconds was, without question, abnormal. Conversely, they stated that where only the J point (that is the junction between the end of the QRS and the beginning of T) was depressed and where the entire segment was constantly ascending toward the base line, the changes were benign.

The next slide (figure 5) demonstrates the various shapes

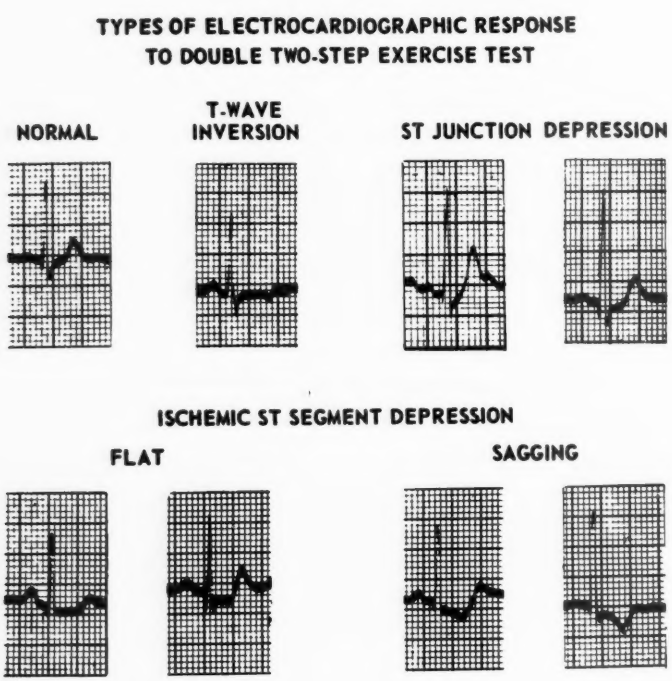


Figure 5

of RS-T as described by these workers. You notice the benign J types as opposed to the "ischemic" or sagging shapes.

This table (figure 6) is a reproduction of their statistical findings and indicates first occlusion rates and mortality rates from coronary artery disease among three types of reactors to the "2-Step Test." Note that among those with negative double "2-Step Tests," the incidence of first occlusion and coronary mortality per 1,000 patient years of observation is the same as might be expected from standard risk individuals. However, the results among those with "ischemic" depression of RS-T are drastically higher than in the negative reactors. Notice that prognosis of those individuals with "junctional" depressions lies somewhere between the favorable outlook for negative reactors and the greatly increased risk of "ischemic" responses.

MORTALITY AND FIRST OCCLUSION RATES IN CASES SHOWING ISCHEMIC ST SEGMENT AND ST JUNCTION DEPRESSION AND IN NEGATIVE REACTORS BY MASTER'S CRITERIA

Exercise Tests Performed in 1942-1951, Follow Up to 1952 Anniversary of Test

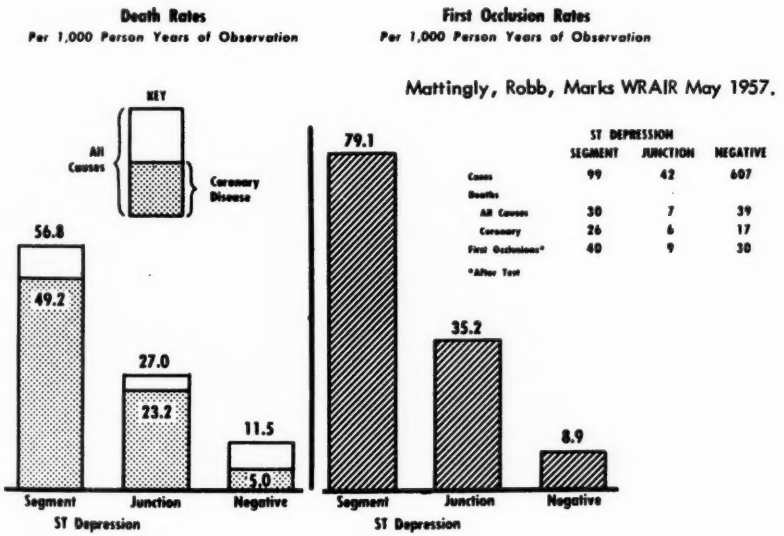


Figure 6

It is clear from this table that a negative test is important, that "ischemic" response is highly significant, and that junctional depression is not necessarily innocuous.

Because of these impressive findings, we began to apply this interpretation by configuration of the depressed RS-T to our own cases. For the most part, we found that what Mattingly and Robb had concluded was essentially correct. However, we were troubled by the fact that, not infrequently, one of our patients with typical coronary artery disease failed to demonstrate the "ischemic" type of depression but showed only the allegedly benign J type.

Dr. Isadore Rosenfeld and I really went to work on this problem. We collected data on all patients from our active file, many of whom we had followed for periods in excess of 8 years. Each patient had several 12 lead resting electrocardiograms and single, or double "2-Step Tests" performed according to our standard procedure. We take lead II and three other leads among V_2, V_3, V_4, V_5, and V_6, immediately after exercise, in 2 minutes, in 6 minutes (or until any abnormalities appearing after exercise return to normal). A single "2-Step Test" is one in which a certain number of trips is performed, in 1½ minutes. Whenever the single "2-Step Test" is negative, a double test is performed in which twice the number of trips are carried out in double the time, that is, 3 minutes. Unless we strongly suspect the presence of significant coronary artery disease, we usually start off with the double test.

Now, to come back to our investigation. We were able to select from our files, 1,000 patients with adequate follow-up periods. Of these we excluded 515 in whom the resting electrocardiogram was abnormal. We excluded these patients with abnormal resting tracings because of our desire to have as homogeneous a population to study as possible. Also, we had observed that in patients with old healed infarcts and residual Q waves that the "2-Step Test" was not infrequently negative. Similarly, bundle branch block patterns, Wolff-Parkinson-White conduction, and other electrocardiographic abnormalities, react somewhat unpredictably to the "2-Step Test." We are currently investigating a response to exercise in such patients with these

electrocardiographic patterns. In any case, for purposes of this study, we used only the 485 patients whose 12 lead electrocardiogram at rest was entirely normal.

TABLE I

Results of Master 2-Step in 485 Cases with Normal Resting ECG

	Men	Women	Total
Double 2-Step Negative	222	29	251
RS-T Depression (All configurations) ½ mm. or more	163	71	234
Total	385	100	485

You see (Table I) that among these 485 patients, 251 had negative double tests. There were 222 men and 29 women. The remaining 234 patients all manifested some type of RS-T depression of varying amounts.

Let us, for a moment, consider the results in our negative reactors. Among this group, all of whom were followed for an average of 4 years, only 2 per cent (5 cases) had heart attacks within 3 years. It was our clinical impression that the remaining 98 per cent of these patients were, in fact, free from coronary artery disease. This is an extraordinarily good batting average.

These results compare favorably with those reported by Mattingly, Robb and Marks, who have written repeatedly that a negative test is strong presumptive evidence for the absence of "ischemic" heart disease at the time of testing. It is interesting to examine the complaints of these individuals found to be free from coronary artery disease, as listed in Table II. Chest pain, shortness of breath and fatigue are common symptoms. You might ask, "What disease did these people have to account for their symptoms?" Table III lists the extra-cardiac diseases found. They include such common lesions as spinal arthritis, peptic ulcer, gall bladder disease, hiatus hernia, and so on.

TABLE II

Master 2-Step Test Negative
Symptoms

	Males	Females
Total	222	29
Chest pressure or pain *	165	24
Shortness of breath **	38	10
Rapid heart	45	13
Irregular heart	24	2
Fatigue	10	1

* Chest pain characterized by one or two qualities of angina in 11 men and 1 woman.

** Occasionally on severe exertion, but rarely true dyspnea. Usually merely hyperventilation associated with psychoneurosis, tachypnea and paroxysmal tachycardia, or distension and eructation of hiatus hernia, gall bladder disease, etc.

(Palpitation, rapid heart, irregular heart 69 males, 15 females.)

TABLE III

Master 2-Step Test Negative

Extracardiac Factors

	Males	Females
Total	222	29
Arthritis	47	3
Ulcer	21	1
"Small Heart"	21	5
Psychoneurosis	17	4
N.C.A.	11	1
Hiatus Hernia	14	1
Gall Bladder	9	0
Hypertension	29	3
CRCVD or CCVD	20	2
Diabetes	10	0
Non-Specific Pericarditis	1	0
? Past History of		
Coronary Occlusion	6	0
Coronary Insufficiency	2	0

Here, (Table IV) we have indicated the age grouping of

TABLE IV

Master Double 2-Step Negative

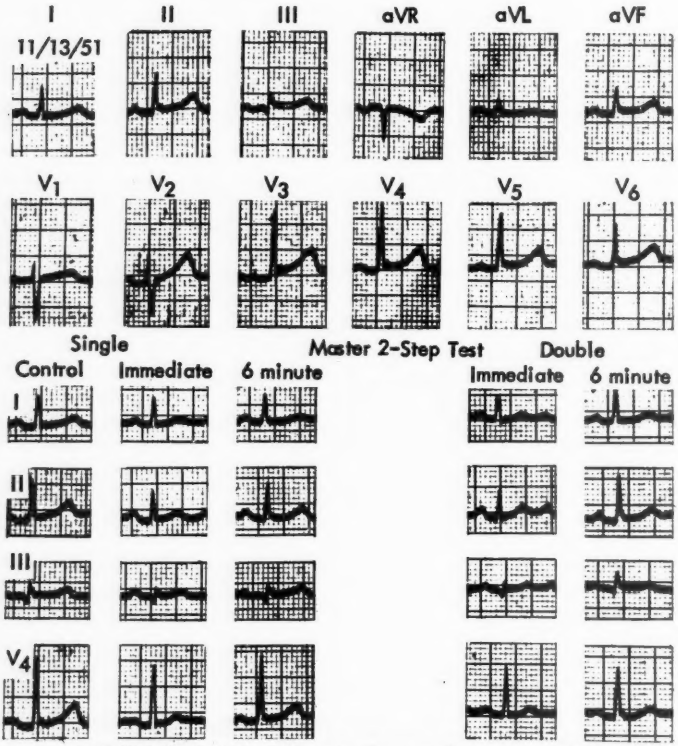
	Male	Female
Under 20	8	1
21–30	16	2
31–40	34	3
41–50	76	8
51–60	59	12
61–70	25	3
71–80	4	0
Total	222	29

Average age male — 46.0 years

Average age female — 47.8 years

these negative reactors. Note that the average age was about 10 years younger than in the organic group (see Table VI). This is what one would expect in a comparison of age distribution of those with functional and organic heart disease.

Before proceeding with our discussion of the 234 cases who showed RS-T depression, let us emphasize again the value of a negative "2-Step Test." When a patient presents with symptoms, a normal resting electrocardiogram and a negative double "2-Step Test," you must look for some other cause of his symptoms. Let me demonstrate this point. The next tracing (figure 7) is that of a well-known actress who was referred for cardiac consultation because of an episode of substernal pain accompanied by pallor and perspiration. Single and double tests were completely negative. There had been some cardiac illness in her immediate family. We concluded that she was subconsciously mimicking, in her professional way, an episode of angina or coronary insufficiency. She was reassured and for the past 8 years has been working at a very fast pace with never a complaint. We could show you scores of examples of patients who, on the basis of symptoms and history alone, were believed to have coronary artery disease. When the double "2-Step Test"



f 30 (5000 M) Normal heart. Severe chest pain of functional origin simulating angina pectoris. On reassurance symptoms disappeared and patient has been very active. Resting ECG and single and double "2-step" test normal (11/13/51).

Figure 7

was consistently found to be negative, a search almost always revealed other causes for their complaints.

Let us return to our 234 patients, followed for an average of 4 years, in whom there was some RS-T segment depression after the "2-Step Test." We divided these patients, clinically, into those with "ischemic" heart disease and those in whom,

on the basis of extensive clinical evaluation and long-term follow-up, there was no evidence of heart disease.

The next Table (Table V) indicates that these 234 patients

TABLE V

Clinical Diagnosis in 234 Cases with RS-T Depression

	Males	Females	Total
Coronary Artery Disease	77	23	100
No Cardiac Disease	86	48	134
Total	163	71	234

consisted of 100 patients with coronary artery disease ("organic group"), and 134 without coronary disease ("functional group"). Among the organic group there were 77 males and 23 females; while 86 men and 48 women did not have heart disease. If we refer to Table VI, we see that the age distribution of the men and women conforms to the clinical observation. The big incidence

TABLE VI

Master 2-Step Exercise Test

Organic and Functional Cases with RS-T Depression

Age and Sex Distribution

	Organic		Functional	
Age	Male	Female	Male	Female
10–19	–	–	–	3
20–29	–	–	5	2
30–39	3	–	14	6
40–49	20	2	34	12
50–59	29	7	19	18
60–69	21	11	14	7
70+	4	3	–	–
Total	77	23	86	48
Av. Age	54.6	59.3	47.7	47.1

of "ischemic" heart disease among our men was in the sixth decade, and the women in the seventh decade. The first cases of coronary artery disease appear in men between 30 and 39; in women 10 years later, between 40 and 49.

We were first interested to see whether "J," or junctional depression, was in fact always benign and, also, whether the "ischemic" configuration was limited to persons with coronary artery disease.

In the next Table (Table VII), we see that, among our 234

TABLE VII

Interpretation of Master Test By Analysis of RS-T Configuration Alone

Correlation with Clinical Diagnosis

Configuration	Total	No Disease Male	No Disease Female	Coronary Disease Male	Coronary Disease Female	False Pos.	False Neg.
"J"	150	81	33	31	5	–	24%
Horizontal & Sag., etc.	84	5	15	46	18	23.8%	
Total	234	86	48	77	23	23.8%	24%

cases with RS-T depression, there are 150 J types and 84 "ischemic" configurations. Note that among the 150 simple junction depressions there are 36 patients, or 24 per cent of the total, with organic disease. Likewise, in the "ischemic" group, there are 20 patients, mostly females, without heart disease. Interpreting the "2-Step Test" by gross configuration of the depressed RS-T segment alone, yielded the same high error of false positives and false negatives, 24 per cent.

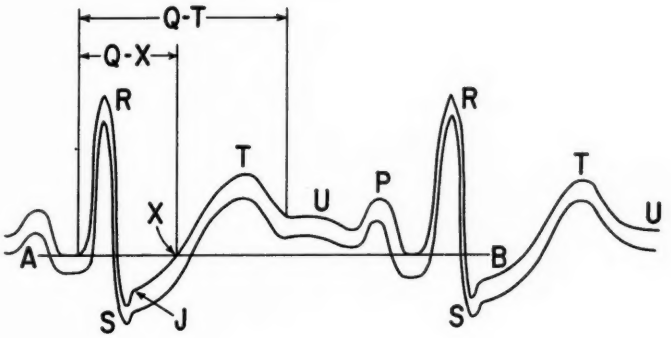
Subsequent analysis of those 36 cases which, despite their simple J depression, did have organic heart disease, revealed that although they did manifest a continuously vertical ascent toward the base line, the point at which the depressed segment returned to isoelectricity, was nevertheless delayed. In other words, the junction depression was dragging itself out.

Our finding of a slow return to the base line of the depressed RS-T in organic cases is in keeping with electro-physiological

principles. As pointed out by Lepeschkin and Surawicz, a depressed RS-T segment resulting from injury or "ischemia" of the subendocardial muscle fibers characteristically persists through most, or all, of the ventricular complex, while RS-T depression, due simply to more rapid repolarization associated with more increased heart rate, is present mainly in the earlier portion of the QRS complex and returns quickly to the base line.

It then became apparent that what was required was a quantitative expression of this RS-T segment depression which would reflect any prolongation or delay in its return to isoelectric. Dr. Rosenfeld then decided to use the technique previously reported by Lepeschkin and Surawicz by which the configuration of RS-T could be determined quantitatively, independently of heart rate. Here, you are not concerned with the shape of the depression, that is whether it's a "J" or an "ischemic" depression, but with the duration of the depression itself.

Electrical systole persists from the beginning of the QRS to the end of the T wave. This next slide (figure 8) shows



MODIFIED FROM LEPESCHKIN, E. AND SURAWICZ, B.
NEW ENGLAND J. MED. 258-511, 1958

Figure 8

the technique determining time in electrical systole (QT) during which the RS-T segment remains depressed. X is the point where the RS-T returns to the isoelectric line. The QX interval, that is the time measurement from the very beginning of QRS to the point of return of the RS-T to the base line, is then expressed as a percentile of the QT interval (QX/QT).

We measured this QX/QT ratio in the 234 cases with RS-T segment depression in order to see whether the organic patients manifested different values than did the functionals. This QX/QT ratio was measured in each electrocardiogram regardless of how much the RS-T segment was depressed below the base line in millimeters. It must be pointed out that in any given post exercise tracing, significant variations in the QX/QT ratio may occur in different leads and at various time intervals, that is immediately, or 2 minutes, or 6 minutes after the test. The largest ratio present in the entire post exercise tracing was the one used. In Table VIII, it will be seen that the mean

TABLE VIII

$\frac{QX}{QT}$ ratio applied to 234 Master Tests with RS-T Segment

Depression 0.5 mm. or more

Clinical Diagnosis	No.	Average $\frac{QX}{QT}$	$\frac{QX}{QT}$ <50%	$\frac{QX}{QT}$ ≥50%
Organic	100	57.4%	1 (1%)	99 (99%)
Functional	134	43.9%	118/134 (88%)	16/134 (12%)

QX/QT ratio among the 100 organic patients is 57.4 per cent. In only one individual with "ischemic" heart disease was it less than 50 per cent. On the other hand, the mean ratio among the functionals was only 43.9 per cent but there were 16 cases, or 12 per cent of the total, who had no heart disease, yet who demonstrated values of QX/QT in excess of 50 per cent.

Table IX shows that the overall accuracy of this QX/QT

TABLE IX

Overall Reliability by Sex of $\frac{QX}{QT}$ Ratio as Applied to All Master Tests with RS-T Depression ½ mm. or Greater

	Total	False Neg.	False Pos.	Correlation With Clinical Findings
Males	163	0.6%	2.4%	97.0%
Females	71	–	16.9%	83.1%

technique, using a 50 per cent ratio as the dividing point between functional and organic cases, is 97 per cent in males and 83 per cent in females. In other words, the women do not seem to react in this particular instance as predictably as the males. You all know that women behave differently in regard to the entire problem of coronary artery disease. While this QX/QT ratio does apply to females with organic heart disease, the correlation is not as high as we would like it for the functional cases. We hope that this problem will soon be solved. In any event, we are working at it.

To repeat — in males, the correlation is unbelievably good. Whenever a depressed RS-T segment persists for more than one-half the time from the beginning of the QRS to the end of the T wave (that is more than one-half electrical systole), it is almost certainly an organic change.

These findings may be expressed in cumulative frequency curves.

This graph (figure 9) shows that among the organic males, all had QX/QT values greater than 50 per cent with but one exception. Almost all the functional males, by the same token, had QX/QT values less than 50 per cent.

We would, at this point, like to recapitulate our statements concerning this different approach to the analysis of the depressed RS-T segment. Remember that the J type depression is usually benign. An "ischemic," that is horizontal or sagging depression, is usually abnormal. In analyzing our 234 cases,

CUMULATIVE FREQUENCY DISTRIBUTION PERCENTILES
OF FUNCTIONAL VS ORGANIC $\frac{Q\text{-}X}{Q\text{-}T}$ RATIOS

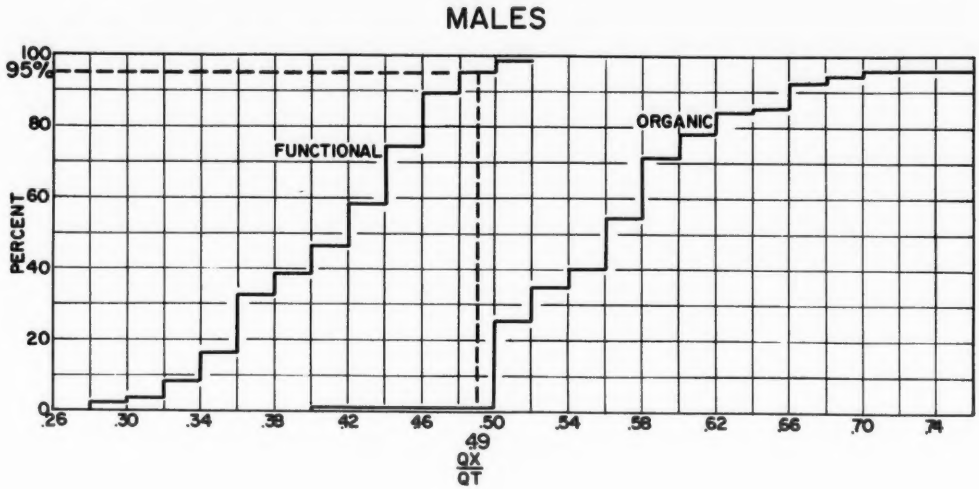


Figure 9

however, we found that there were some J's that were, in fact, not innocuous, while there were a few so-called "ischemic" segments present in people without heart disease. In order to refine the interpretation of the "2-Step" electrocardiogram, so as not to be dependent on gross configuration alone, we applied the technique of Lepeschkin, whereby we measured how long during electrical systole the RS-T remains depressed. This technique should be used regardless of what the RS-T segment looks like to the naked eye. It is simple to do and extremely reliable, particularly in males where the correlation is eminently satisfactory. It is also valid in females but to a somewhat lesser degree. Whenever you find a depressed RS-T segment which remains below the base line for at least one-half the time of electrical systole, which is measured from the very beginning of QRS to the end of the T wave, the test should be considered abnormal. One word of caution. As mentioned earlier, occasionally, the long, thin, vertical heart may present with an abnormal value. This is also true in individuals who are psychoneurotic, or who have neurocirculatory asthenia, or who are subject to paroxysmal tachycardia. In these cases, clinical evaluation is paramount. Another point to be reemphasized is that QX/QT value may vary somewhat from lead to lead after exercise and you must look for and find the greatest ratio, which is the only one that counts.

We feel that application of this technique serves to reduce to an almost insignificant level, the incidence of false positives after the "2-Step Test." A negative double test, as we pointed out, constitutes reliable evidence excluding the presence of any impairment of coronary circulation at the time of testing. You must make absolutely certain that your resting electrocardiogram is normal. This is so because some old infarction patterns, even stable ones, may fail to produce RS-T segment changes after exercise, probably because of the presence of the scar tissue within the heart. We suggest that you use lead II of the standard leads and three or four chest leads to record the post exercise tracing. You can select the best leads you are going to use from inspection of the resting electrocardiogram — the leads showing the tallest R and the smallest S are usually the most informative.

After exercise we would advise you not to be influenced by the amount of RS-T depression. So long as there is any depression at all, whether it is ½, or 1, or 2 mm., as long as the QX/QT ratio is greater than 50 per cent that record must be considered abnormal, unless clinical evidence against coronary artery disease is overwhelming.

In summary, the highlights of this presentation can be stated in a few short sentences.

1. There is need for an objective test of cardiac function, especially in insurance medicine, or in any other circumstances where the clinical history may not be available. This is particularly true because the resting electrocardiogram, even in the presence of coronary artery disease, may well be entirely normal. Symptoms of pain are present almost as often among functional cases as they are in organic cases and it may be difficult to distinguish one type from the other. Relation of pain to effort and its relief by nitroglycerine may also be variable.

2. Standardization of exercise is vital because less than the critical amount required for a given patient may fail to produce changes while excessive effort may cause abnormalities, even in normal individuals and may be dangerous. Standardization is also important in research and, in fact, wherever findings are to be compared by different investigators in large numbers of patients.

3. The "2-Step Test," as originally conceived at Cornell, was based on sound physiologic experiment and confirmed the fact that efficiency of work was dependent on age, sex and weight.

4. Modifications of the "2-Step Test" have failed to yield any advantage over our standardized procedure and, in fact, may be both unpleasant and dangerous.

5. When performed under basal conditions in the absence of acute disease, the "2-Step Test" is absolutely safe.

6. Analysis of the depression of the RS-T segment after exercise constitutes the most reliable criteria for interpretation of the test.

7. Gross configuration of this depressed segment, though grossly reliable, is not sufficiently sensitive to separate all func-

tional from all organic cases. When the depressed RS-T segment persists below the isoelectric line for one-half the time, or more, of electrical systole, the result must be considered organic, until disproved.

PRESIDENT KIRKLAND — The discussion will be opened by my associate, Dr. Charles Kiessling.

DR. CHARLES E. KIESSLING (Prudential, Newark, New Jersey) — The first thing I would like to do is to thank Dr. Master and his colleague, Dr. Rosenfeld, for this very timely and thought-provoking discussion. I think the best thing I can do is try to pin you down with the help of some slides that I just happen to have with me. I don't want you to make the diagnosis, necessarily, but demonstrate how you apply and how you use the contours to arrive at your conclusion.

This is obviously an abnormal tracing (figure 1). What I would like to do is have you demonstrate, again, how you measure the QX and QT interval.

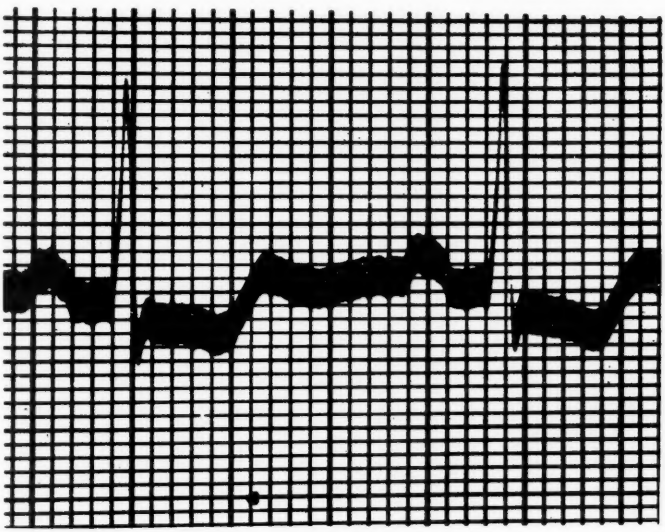


Figure 1

DR. ROSENFELD — As you correctly point out, this is an obviously abnormal response to exercise. The RS-T is depressed almost 2 mm. and has a sagging, "ischemic" configuration. One could interpret the changes present without recourse to any measurements or formulae. However, to measure the QX/QT interval, one would determine the point at which a horizontal line joining two consecutive PR segments intersects the depressed RS-T segment. The distance of this point (x) from the very beginning of the preceeding QRS complex, in this instance, measures .28 seconds. This is the QX interval. This is then expressed as a percentile of the QT interval in the same ventricular complex. Measuring from the beginning of QRS to the end of the T wave, the distance is found to be .42 seconds. The QX/QT is then two-thirds, or 66.6 per cent. This exceeds our upper limit of normal, which is 50 per cent.

DR. KIESSLING — Figure 2 is again abnormal and, by any criteria, would be called so. Will you measure this one for us, Dr. Rosenfeld? The end of the T wave is less obvious and

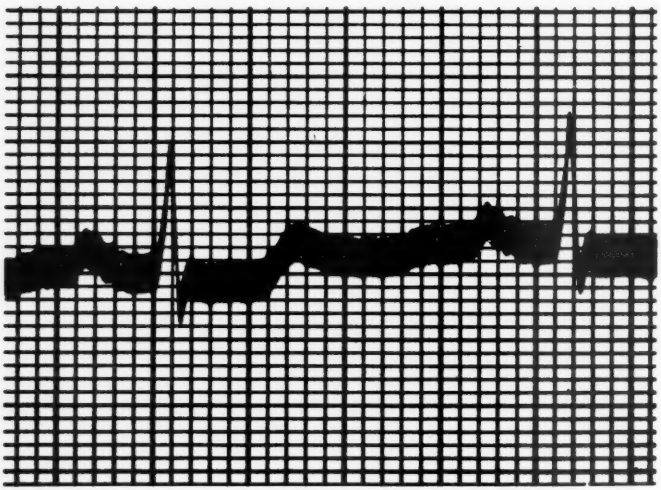


Figure 2

this might be a point of individual judgment as to where you want to measure the end of the T wave.

DR. ROSENFELD — The RS-T segment is depressed about 1 mm. and the configuration of the segment is horizontal and "ischemic." Here, again, close visual inspection permits interpretation. To determine the duration of time the RS-T segment remains depressed below the base line, that is the QX/QT interval, we would, again, draw a horizontal line between two consecutive P-R segments. The point at which this intersects the RS-T segment (x) is .24 seconds from the beginning of the QRS complex. The QT interval is .40 seconds. The end of the T wave, while perhaps not as clearly defined as in the previous tracing, can, nevertheless, be accurately determined. In any event, one can double-check this QT interval by examining other leads with the same heart rate in which the end of the T wave is more clearly defined. The QX/QT ratio then, in this case, is 60 per cent — abnormal.

DR. KIESSLING — Figure 3 shows an S-T segment depression that would, in the opinion of some interpreters, be insufficient to be considered abnormal. However, by your current criteria,

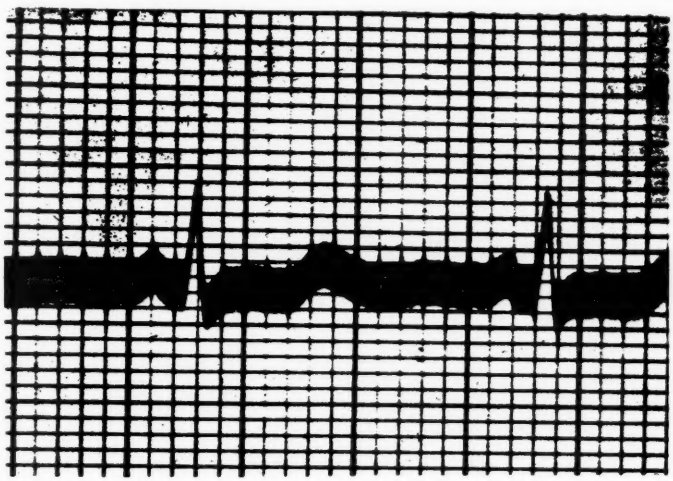


Figure 3

this would measure abnormal in my opinion. The point I am trying to make is that even slight S-T segment depressions if prolonged enough, constitute an abnormal test.

DR. ROSENFELD — There are several important points to be made from this particular tracing. It should be emphasized that, in order to make a proper evaluation of an RS-T segment, one should have at least two and, ideally, three consecutive complexes in which the base line is level. You will notice that, in this tracing there is a slight downward trend of the isoelectric line which may impart to the RS-T segment an illusion of depression. At best, this is a border line tracing. Analysis of the first complex reveals minimal RS-T segment depression and a QX interval of only .14 seconds. The QT is .34 seconds. There is a slight rise, or hump in the depressed RS-T segment with which our horizontal line drawn from the beginning of QRS intersects early. This, in fact, shortens the QX interval. We consider the first point of intersection on the isoelectric line as the point which determines (x). Analysis of the second beat must be incomplete because the end of the T wave has been cut off. However, if we use the QT interval of the preceding beat, we see that the QX/QT ratio here is 20 over 32. That is abnormal. So, in this particular tracing, I would like to see several consecutive beats in order to make up my mind whether the test is abnormal. I must add, however, that were we to find two or three level beats, identical to the second complex, in the tracing, I would be prepared to call the response positive, despite the very minimal depression of the RS-T segment.

DR. KIESSLING — In other words, any S-T segment depression, however minimal, if it is sufficiently prolonged to fulfill the requirement of QX/QT greater than one-half, is an abnormal response.

DR. ROSENFELD — That is correct.

DR. KIESSLING — I show you Figure 4 to let you demonstrate to us what you mean by the isoelectric line. To me the tracing looks abnormal but I wonder how you would measure it.

DR. ROSENFELD — One joins the ends of two consecutive P-R segments to determine the isoelectric line. As you know, Lepeschkin and Surawicz have suggested that, when the terminal

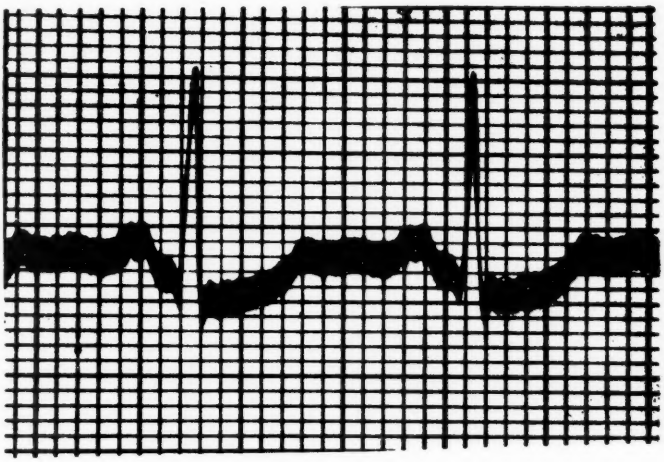


Figure 4

portion of the P-R segment slopes downward, this be continued by a line drawn to the beginning of the RS-T. This point, they believe, is the true position of the J.

DR. KIESSLING — Let me interrupt and ask you what you mean by "J"?

DR. ROSENFELD — J, or "junction," by definition, is that point at which the QRS complex ends and the RS-T segment begins. This, then, is a point and has no duration. We have not found it necessary to correct in the manner suggested by Lepeschkin for J. In our experience, those cases in which the point J is only falsely depressed, the QX/QT interval will be considerably less than 50 per cent. In this particular tracing, however, it is in excess of one-half.

DR. KIESSLING — Figure 5 shows an ascending S-T segment but the entire S-T segment is rather markedly depressed. As I understand you, whether the S-T segment is ascending or horizontal makes no difference when you apply the formula.

DR. ROSENFELD — That is right. Now, this particular tracing illustrates an important point. If you look carefully at the shape

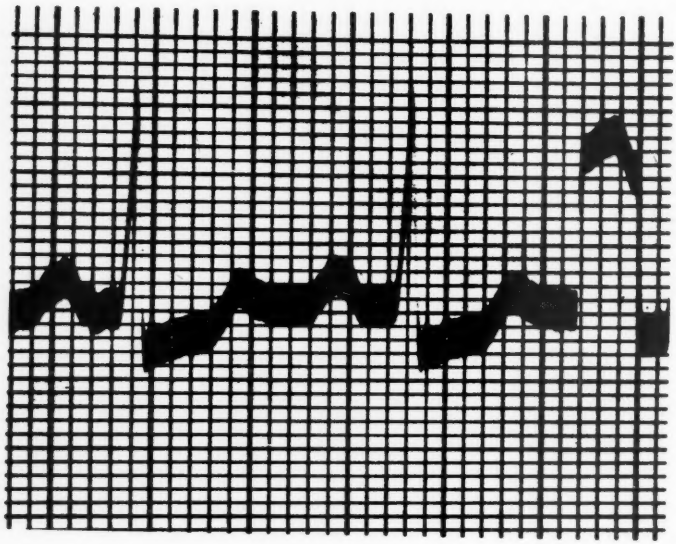


Figure 5

of the depressed RS-T, you will notice that it fails to meet the criteria of "ischemic" configuration as defined by Mattingly and Robb. In other words, the RS-T depression is constantly ascending and does not have the initial .08 second horizontal course characteristic of the truly "ischemic" segment. If one were to interpret this response to exercise by configuration alone, one would, of necessity, conclude that this was a functional response. I do not believe that this is so for two reasons. First, the QX/QT ratio is considerably greater than 50 per cent. Second, the RS-T segment is depressed some 2 to 3 mm. In our series of 100, Dr. Master and I have found that whenever RS-T depression is of the order of 2 mm., or more, the patient has "ischemic" heart disease. Incidentally, in such cases the QX/QT ratio is always greater than 50 per cent. In all fairness to Mattingly and Robb, it must be stated that they, themselves, found that the "J" in which the ascent, although always

continuous, was slow, constituted a problem of interpretation and might well be abnormal.

DR. KIESSLING — Here (figure 6) is another ascending seg-

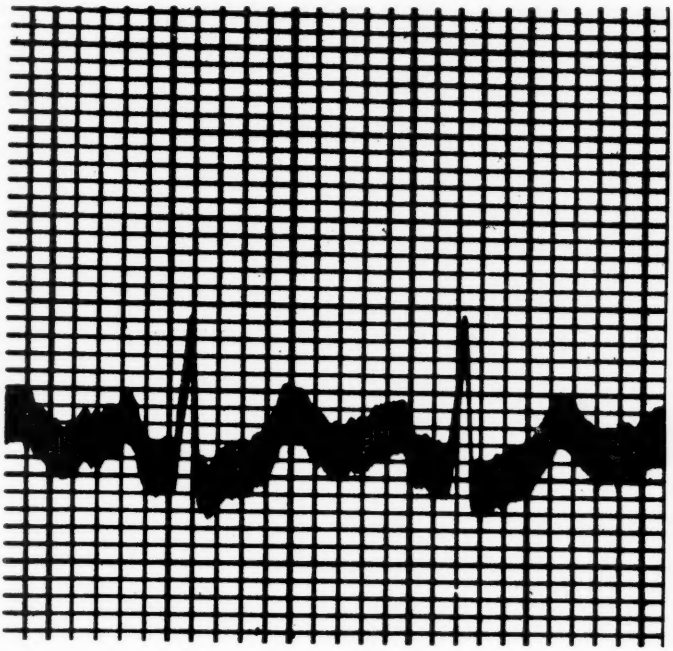


Figure 6

ment depression which is less marked than the previous. On your criteria, what do you think of this one?

DR. ROSENFELD — This is a functional response and represents the simple junctional depression considered to be innocuous. Here, the RS-T depression is about 1 mm. but the QX/QT ratio is slightly less than 50 per cent.

DR. KIESSLING — Figure 7 shows sagging S-T segment depressions. One often sees this response in exercise tests and I wonder how you apply your formula to this configuration?

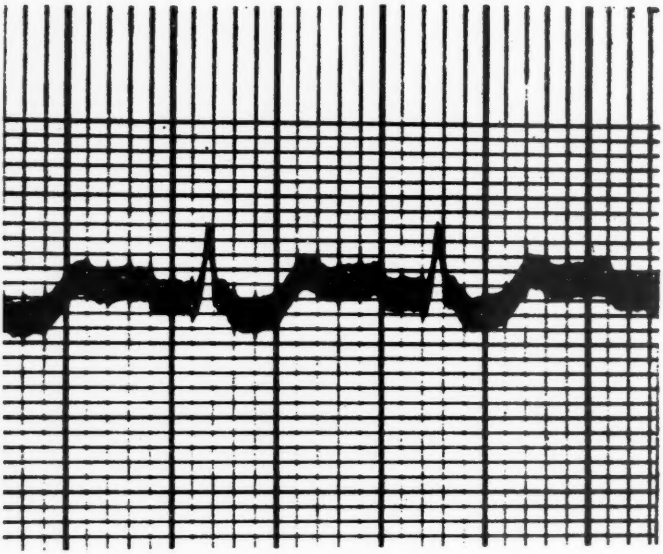


Figure 7

DR. ROSENFELD — Well, now you've got me. This particular record looks very much like a digitalis effect, in which one may visualize a round tablet sitting in the trough of the depressed segment. We are simply not certain as to what to do with this particular finding. It is in areas like this that the clinician has distinct advantage over the physician engaged in insurance medicine. My evaluation of this particular record would be very much influenced by the patient's history. We have seen such responses in which there is no actual depression of J, but where the entire segment is sagging, both in the normal population and in patients with "ischemic" heart disease.

DR. KIESSLING — Well now, let me pin you down. Without any history at all, how would you interpret this response?

DR. ROSENFELD — For the record, I want to make it perfectly clear that I never, repeat — *never* — interpret a tracing without a clinical history. So, you can't pin me down.

DR. KIESSLING — This is one of our main problems. We suspect coronary disease; we obtain an exercise test and we are confronted with a record such as you see here. What do we do?

DR. ROSENFELD — Go into private practice!

But, seriously, I think one must give priority in this instance to the clinical picture. If, as you say, you suspect coronary disease and if you have a man in the coronary disease age group, then I would favor "playing it safe" and consider this tracing border line abnormal. We are currently working on this very problem and may have more information at a later date.

One important factor would be the appearance of this patient's resting tracing.

DR. KIESSLING — Suppose it were absolutely normal. Would you care to commit yourself then?

DR. ROSENFELD — You mean if this particular sag was not present at rest but only developed after rest?

DR. KIESSLING — That's right.

DR. ROSENFELD — I would be inclined to consider it abnormal. Now, irrespective of the fact that J is not depressed, one draws a line from the beginning of the QRS complex to intersect with the sagging RS-T as it returns to isoelectricity. If one finds the QX/QT ratio greater than 50 per cent, this would tend to strengthen my belief that this response is probably abnormal. Were the ratio, however, less than 50 per cent, we would be right back where we started.

DR. KIESSLING — Figure 8 shows the same contours but to a lesser degree. I suppose it would be unfair to ask you to commit yourself on a tracing that presents more problems than the previous one?

DR. ROSENFELD — I just cannot be sure of this particular tracing. It measures out to a ratio of greater than 50 per cent, but I again would have to hedge on its interpretation.

DR. KIESSLING — Then, any case in which the J is not depressed constitutes a problem for which there is no definite answer at the present time.

DR. ROSENFELD — That is essentially true. And it is certainly so for these last two tracings but, fortunately, one sees such

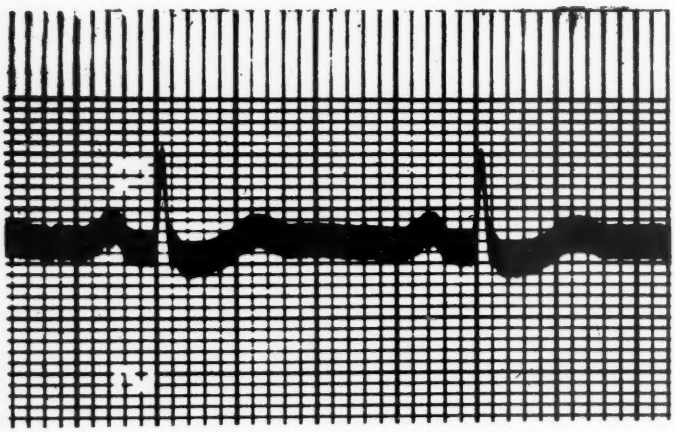


Figure 8

tracings only very occasionally. We also, however, see post exercise electrocardiograms in which, although J itself is not depressed, the succeeding portion of the RS-T complex is either obviously directed downward, or is very dramatically sagged. This is the type of change, for example, which one may observe after the administration of digitalis. In the absence of any history of digitalis ingestion, such a record must be considered abnormal.

DR. KIESSLING — In other words, it becomes a quantitative estimation when dealing with isoelectric J's.

DR. ROSENFELD — I would prefer the word "qualitative" because we cannot, as yet, measure the extent of sag or downward course of the RS-T. But, when J is depressed, however minimally, we can quantify it by determining the QX/QT ratio. Where it is not depressed, however, we must rely more on qualitative judgment of the S-T segment sag.

Fortunately, this type of response is not really as common as this audience might infer from our lengthy interchange.

DR. KIESSLING — The next tracing (figure 9) pertains somewhat to the same subject in that the J joint is not really depressed

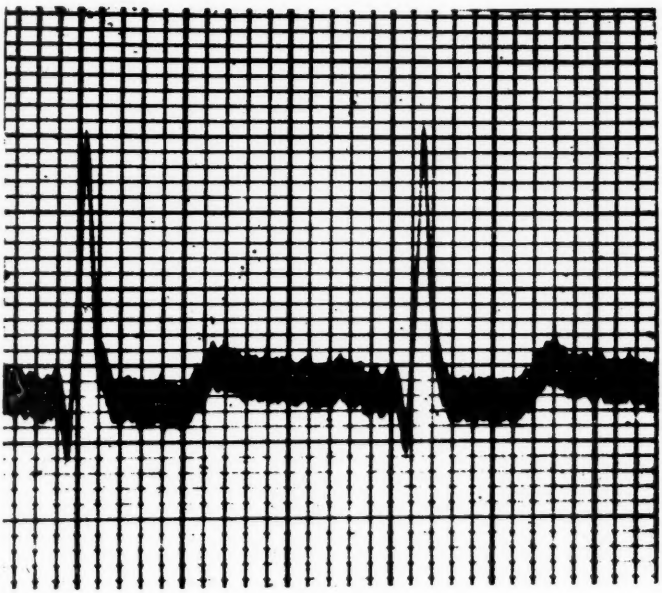


Figure 9

but that the S-T segment dips blow the isoelectric line just before the ascending limb of the T wave.

DR. ROSENFELD — Well, actually, I think there is slight, though minimal, depression of J in this particular case and this permits the application of the QX/QT ratio which, in this case, is greater than 50 per cent. I want to reemphasize the fact that when there is any depression at all of the J, we can apply this ratio.

In the majority of cases, the QX/QT is much less than 50 per cent when J depression is very slight. As Dr. Master pointed out in his talk, we found that about 75 per cent of RS-T depressions of the J type configuration were, in fact, functional responses.

DR. KIESSLING — Occasionally, one sees an exercise test consisting of three standard leads and two precordial leads. In lead

III, one may note slight depression of the J and succeeding S-T segment, perhaps ending in an inverted T wave. I am inclined to disregard this finding. Is that correct?

DR. ROSENFELD — Yes. This is very unusual. If there should be real ischemic depression in lead III it would also likely appear in other leads.

DR. KIESSLING — Does one measure the S-T segment in those complexes where it is most depressed, or in those complexes where the S-T segment depression, although slight, is most prolonged?

DR. ROSENFELD — Where it is most prolonged.

DR. KIESSLING — At the Prudential, we applied these criteria to the relatively few exercise tests we have on file. Usually, we do not do exercise tests on individuals who have typical angina, so that the number of cases we have is relatively small — 88 cases. I have here a slide (figure 10) showing the correlation between our interpretation of the exercise test and the clinical appraisal.

I have not used the term "false positive" because, when the exercise test does not agree with the clinical diagnosis, it is always possible, of course, that the laboratory test is correct

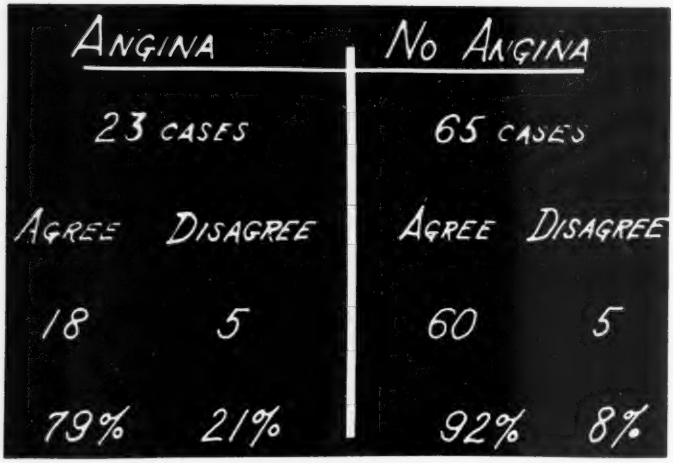


Figure 10

and the clinical impression is incorrect. I have used the terms "agree" and "disagree." Those cases on which we made the diagnosis of angina were diagnosed by more than one examiner, and the diagnosis was definite. As you see by this slide, of the 23 cases of angina, 18 had double exercise tests that we could call positive. In 5 cases, the exercise tests were called negative, and I can assure you that we tried hard to make as many of these exercise tests as possible positive. The 5 tests that were negative were absolutely negative. Of these 5 cases, 3 of them subsequently, and relatively soon after the exercise test was made, developed coronary occlusions. In these 23 exercise tests, 18, or 79 per cent, agreed with the clinical diagnosis.

We did 65 exercise tests on individuals whom we did not think had angina. Of the 65 cases, 60 resulted in negative tests, producing an agreement of 92 per cent. These were 5 cases in which the test was positive and in which we did not think angina was present.

On the basis of my experience, I believe that a negative double exercise test makes the presence of angina unlikely, but does not completely exclude it. Angina can exist with a negative double exercise test. I would like to add that in spite of definite measurements and concise terminology, there is also an element of clinical judgment involved in the evaluation of any exercise test.

PRESIDENT KIRKLAND — This wonderful presentation is now open for discussion from the floor.

DR. M. HENRY CLIFFORD (Union Central, Cincinnati) — Dr. Rosenfeld, you mentioned digitalis, and you may have left the impression that digitalis intoxication might not have shown on a resting electrocardiogram. Yet, digitalis intoxication can exert quite an effect on the normal.

DR. ROSENFELD — I'm afraid I did not make my point clear. I said nothing about digitalis intoxication, since this demands treatment and not a Master "2-Step Test." Individuals who are receiving digitalis, for one reason or another, will show the effect of this drug in terms of RS-T segment and T wave changes. These make subsequent interpretation of the "2-Step" difficult.

In fact, when such changes exist on the resting tracing, whether they are due to digitalis or other causes, the test should not be done.

DR. FRANCIS E. DEMARAIS (Penn Mutual, Philadelphia) — I would like to ask, in view of the comments that have been made, whether there were any tests that indicated that the RS-T segment depression reflects subepicardial ischemia, vectorcardiographically.

DR. ROSENFELD — Depression of the RS-T segment on the scalar electrocardiogram reflects the existence of an S-T vector in which the point of origin of the cardiac vector does not coincide with its point of return or termination. Whether an RS-T segment is elevated or depressed will depend first on the orientation of its vector and its relation to the axis of derivation of any given lead. That is, it depends to what leads you are referring. Second, several different mechanisms may be responsible for RS-T segment deviation. The most important is a current of injury, but another cause is the overlapping of the processes of depolarization and repolarization. Usually, depolarization is complete before repolarization starts. But when repolarization gets underway before depolarization has ended, the balance of electromotive forces is altered, and S-T segment deviation is produced. This is the probable explanation for RS-T segment changes in bundle branch blocks (notably left bundle branch block), ventricular hypertrophy patterns, and the syndrome of Wolff-Parkinson-White conduction. In all of these, the S-T vector is a force representing overlap of depolarization and repolarization and its direction and magnitude will vary. Now to get back to your question, the RS-T segment depressions seen in leads II, and V_3 to V_6 after the Master "2-Step Test" are presumed due to subendocardial ischemia, not subepicardial ischemia. Here, the injury vector is directed from the subendocardium toward the left ventricle, that is, to the right, posteriorly and superiorly. Those of you familiar with vector concepts will see that this will cause RS-T depression in leads I, II, III, aVL, aVF and in the precordial leads.

In patients with previous infarction and resultant scar tissue formation, RS-T segment elevation may occur after exercise.

Here the necrotic muscle area is electrophysiologically inert, and so the current of injury will be directed toward it. When the infarction involves the anterior wall, this S-T vector is therefore pointing anteriorly, and the derived electrocardiogram will show elevation of the RS-T segment in the chest leads.

DR. LAWRENCE L. MCLELLAN (Provident Mutual, Philadelphia, Pennsylvania) — Would you care to comment on any experience in so-called right bundle branch block, in tests where there is a benign bundle branch block?

DR. MASTER — We are leaving this problem for future investigation. Unofficially, I can tell you that my impression is, like that of others, that if you have a WPW, a right bundle branch block, and observe the type of depressions we have shown you, it is probably significant. However, if there is no change in these records after exercise, unlike a negative "2-Step" with a perfectly normal resting electrocardiogram, you just can't be sure.

DR. PAUL S. ENTMACHER (Metropolitan Life, New York City) — Do you then draw any conclusions from the results of the test where you see a change after exercise?

DR. MASTER — Yes, if there are changes of the type we have described, with a QX/QT ratio greater than 50 per cent. But very frequently, a man may still have active coronary disease, but has only Q waves without T wave inversion, or RS-T depression, and he may get no change after the exercise. That's why we started with a perfectly normal resting electrocardiogram. We feel that the slightest RS-T depression at rest is suspect.

DR. KIESSLING — If the resting record shows an elevated RS-T segment, does the fact that the S-T segment goes down to the isoelectric line, following exercise, mean anything?

DR. MASTER — The RS-T segment is often normally elevated, particularly in young people, Negroes, and even in older persons. Now for example, if a 3 mm. elevation in a chest lead comes down to normal, it is of no significance. It is only abnormal when the RS-T goes below the base line and the QX/QT is greater than 50 per cent.

PRESIDENT KIRKLAND — I suppose you've noticed that I asked Dr. Master to sit down, up here. If I didn't, I think he would get

the equivalent of a double test on himself before he got through, jumping up here on the dais, back and forth.

DR. MURRAY F. BELL (New York Life, New York City) — There has been something in the literature about potassium changes when electrocardiograms are taken shortly after meals. I wondered whether an exercise tolerance test, after a normal tracing is taken, at such time, might demonstrate such confusing changes in the post exercise terms, which were not present in the resting record. Second, since food itself is considered by some authorities to be a type of loading test, do you prefer to do your test either in a fasting state, or at least a couple of hours after a meal, rather than doing it immediately after a meal? In effect, if that is true, this man is being given an additional loading.

DR. MASTER — I agree with your information. I think it should be done in a basal state, and I learned that from Tom Mattingly in 1953, when I went to the Walter Reed and saw what he was doing. We used to give postgraduate courses at Columbia, and we would have doctors from all over the country come for one week, every day from nine to five. They would be smoking cigars and pipes, and if they had a moment off, they wanted to see the vector that Dr. Rosenfeld, or Dr. Grishman was running. They were always on the move. Then when they had a "2-Step" done, being nervous, with no time to rest, smoking, we got a large number of false positives.

Mattingly says that he treated these patients just as if they were having a basal metabolism, and I go along with that. No breakfast or very little breakfast, have a good night's sleep and they should rest a bit just before the test. After a meal, it would no longer be standardized; it would be a different test. I permit a piece of dry toast and weak tea. If an hour's time has elapsed, or two hours, after eating, however, I don't think it makes any difference how big his breakfast is.

DR. JOHN S. PEARSON (American United, Indianapolis, Indiana) — I would like to ask if Dr. Master or his associates had a case where the resting electrocardiogram shows a QX/QT ratio of 51 per cent on the resting, would they then do a test?

DR. MASTER — Officially, we would not, and I write that it

should not be done, because there have been accidents and the accidents have always been when a patient was obviously sick.

Now, I certainly will admit that, for research purposes, we have done a lot of tests of abnormal records. But in each case we know the patient well. I am thinking of a patient I saw yesterday, with deep Q waves, but he had all this for 14 years at least, and functionally he was completely recovered.

DR. FERALD D. MAUK (Republic National, Dallas, Texas) — I would like to hear Dr. Master's comments regarding the double "2-Step" in contrast to the single, when it is negative, in the chest pain type of case.

DR. MASTER — Mattingly has written again and again that the test should be done only by a doctor. Now, frankly, I have two nurses to do it, but I'm always around and I always see and talk to the patient beforehand.

If the patient has a normal resting electrocardiogram, but he had an hour's pain the night before, I wouldn't do even a single "2-Step Test." Or, if he had it two weeks ago and says, "I've been perfectly well since," I think you could start with a double, but it's better not to take chances. Start with the single. If the single is negative, I would have the patient return the next day to do a double.

I believe that Mattingly and Robb always start with a double. I took some figures in preparation for this talk, and found that we start with a double in 8 out of 10 of our cases. But, again, you see, you're really doing the same thing, as a single test, if you start with the double but tell the patient to stop the very instant he gets any complaint or sensation in the chest.

DR. FRANK I. PITKIN (New England Mutual, Boston, Massachusetts) — A lot of us have problems. For instance, in my own company, we have actually made out a form letter saying, "Will you please do it this way. We'll provide you with Dr. Master's exercise. We would like a double test." We even pull it out and say, "It would appear to us that Mr. So-and-so should take so many trips in 3 minutes. Please label the leads, the number of trips, and time after exercise these were taken." When we get them back, the man took 36 trips in 3 minutes, and the pulse rate is only 88, immediately after exercise.

Now, do you have anything to indicate what reasonable percentage of people would not have a rate of 100 or close to it, immediately after the exercise, for a double test?

DR. MASTER — Do you mean normal people or people with coronary disease?

DR. PITKIN — Well, presumably, normal people.

DR. MASTER — Well, I don't know; I couldn't give you figures. I do know that both patients with and without organic coronary disease, immediately after exercise have rates that go up from 60 to 80 to 90 to 100, rarely 110.

DR. PITKIN — Would you assume a significant number of people, presumably normal or questionably normal, would have rate under 90 after the amount of exercise for the double test?

DR. MASTER — Oh, yes, not many, but definitely there would be some.

DR. HARRY UNGERLEIDER — I have an observation which I think is very good. I think, in cases who have had coronary thrombosis and myocardial infarction, Arthur agrees that it is a good thing to do an exercise test before letting your patient go back to work. I would under no circumstances send the man back to work without an exercise test, and it's much better to do a test of this kind under controlled conditions than say, "All right, you can go back to work," not knowing what the man is going to do, or what the particular necessities of his job are. There may be some risk in this particular procedure, but I think if you do it under controlled conditions, it is a very important test in sending your patient back to work.

DR. SAMUEL R. MOORE (Life of North America, Philadelphia, Pennsylvania) — I would like to ask if there are cases where you cannot determine the QX/QT ratio, and what criteria you would now apply for such cases?

DR. MASTER — It is not a difficult procedure to measure the QX/QT ratio. I think you can tell most of them by eye, or just take a little piece of paper and mark the beginning of QRS and then mark where the RS-T comes back to the base line.

Dr. Rosenfeld said if you don't see the end of the T in one lead, look at it in another. But it happens only rarely that the

experienced electrocardiographer will have real difficulty determining this point. Incidentally, I don't understand Dr. Kiessling's disagreement with our results in his series of 23 cases of angina. I would certainly like to see those 5 cases that didn't pan out. Maybe, we could get together on them. But in any event, you need larger numbers than this to draw any conclusions.

PRESIDENT KIRKLAND — Well, we certainly are very grateful to the participants for this wonderful session.

I would like to go a little further with the introduction of Dr. Rosenfeld. This is the first time I ever introduced anybody after he had performed. Dr. Rosenfeld is working currently over at New York Hospital. As a matter of interest to you all, he is Dr. Master's son-in-law. I am informed, however, that he was first a cardiologist before he met Dr. Master's daughter.

I want to thank Charlie for doing what he is doing to keep this moving, as well as all the discussants.

Our next paper is entitled, "Factors in the Evolution of Occlusive Coronary Artery Disease," by Dr. Milton Helpern, Chief Medical Examiner of the City of New York and Professor of Forensic Medicine at New York University Post Graduate Medical School.

This looks like Old Home Week to all of you people, probably, because Milton is another of my old friends. I did this the easy way, you know. There's no use writing to people who never heard of you and trying to get them to come long distances when you can write to a lot of people who can't say "No." Milt is indebted to me for a number of things which I won't go into detail about.

Milt graduated from Cornell in 1926 and interned at Bellevue — another Bellevue man, you see. Then, he became Resident Pathologist, and I had the honor to serve under him as Assistant Resident Pathologist, in the old days when there were only two. I suspect that there are about 20 now, although I don't know. For many years, he was Assistant and Associate Visiting Physician at Bellevue, and he has had numerous pathological appointments over the years. Well, that's just fact. I'll take this up with my secretary later, along with Dr. Kiessling, next week.

He has been associated with the Office of the Chief Medical

Examiner ever since the thirties, and has been Chief Medical Examiner for quite some period of years.

As I said, he is an old and valued friend of mine, and I'm just not going to go any further with this, because here's another man you want to hear, not me. Dr. Helpern!

FACTORS IN THE EVOLUTION OF OCCLUSIVE CORONARY ARTERY DISEASE

MILTON HELPERN, M. D.
Chief Medical Examiner
City of New York

I want to say that it is really a great privilege and honor to address this meeting, and it is particularly pleasurable, for some of the reasons that Dr. Kirkland just mentioned, for me to be able to present this paper while he is President of this Organization.

His remark about "pathological appointments" was not too bad because, at first when I was at Bellevue, in the Department of Pathology, I was known as a "pathological intern," along with a number of other people. None of us seemed to mind because each of us had the same designation. But, looking back, I guess we were all a little pathological and we had quite a time.

I am going to talk about some factors in the evolution of occlusive coronary artery disease. The title of my paper may be a little misleading in the sense that you may have the impression that it will provide the answer, which it will not. I want to discuss several phases of this disease, which I have had an opportunity to study as a pathologist for many years in the Medical Examiner's office and to have become especially interested in connection with a current project, which is part of a larger one concerned with the study of the relation of strain and trauma to disease of the heart and great vessels, sponsored by the American Heart Association. The larger Committee, under the Chairmanship of Dr. Paul White, is concerned with an over-all study of the relation of strain and trauma to heart disease. The Clinical Pathological Subcommittee is studying the pathological lesions in the coronary arteries in cases of sudden and unexpected death from this disease and is correlating them with the circumstances. From this work, some very interesting information has been obtained. It is not new, but we have taken the opportunity of examining some of these cases a little more intensively than in the past,

and it is interesting how much better one can evaluate the lesion and disease when serial sections, rather than isolated sections of an involved artery, are studied.

Occlusive coronary artery disease remains the most common cause of sudden and unexpected disability and death, especially of middle-aged white men, and tremendous efforts have been and continue to be expended in the study of the evolution of this disease. These investigations have been along epidemiological, clinical, pathological and experimental lines. A vast amount of basic information has been collected and disseminated but, despite the available knowledge, there is considerable misunderstanding about the nature of the disease, the extent to which the disease may have advanced when symptoms first develop and the changes and complications within the heart, both anatomical and physiological, which cause disability or death.

Much is known concerning the development of lesions in the coronary arteries and concomitant lesions in other parts of the heart. The clinical and electrocardiographic manifestations and their variety, in those cases which develop symptoms and disability, are appreciated by the well-trained clinician. Great progress has been made in the management of the patient during his illness and rehabilitation after recovery from a manifest episode of this disease. But the detection of significant development of the disease in the presymptomatic stage and the determination of its existence and extent prior to the appearance of clinical manifestations and electrocardiographic changes are challenges to the conscientious physician. Occlusive coronary artery disease, like many other significant disease processes, may not evoke concomitant symptoms and signs and, in many cases, never does until the occlusive process in the coronary arteries has become far advanced. The progression of the disease in the coronary arteries may be entirely silent or produce only mild symptoms, despite the fact that the over-all atherosclerotic occlusive process in the coronary arteries has not been one of gradual, even progression, as might appear from a casual, random study of the lesions at the time they are first encountered when symptoms and sudden, entirely unexpected death from the disease occur in an apparently healthy person.

In about 75 per cent of sudden and unexpected natural deaths

from occlusive coronary artery disease, the occlusive lesions in the arteries are fully developed without evidence of fresh or even recent acute occlusive complications, such as hemorrhage into an atheromatous plaque with or without luminal thrombosis, or of thrombosis without evident or suggestive origin in hemorrhage into an intimal plaque. In about 25 per cent of unexpected deaths from this disease, the long standing occlusive sclerotic lesions of varying extent are found complicated by fresh acute occlusive lesions in the involved coronary arteries. It is in this group that the fresh acute occlusive process is apt to be found complicated by a fully developed fresh myocardial infarction. Even in these cases, the entire process may remain silent, or relatively asymptomatic, until the myocardial infarct ruptures dramatically into the pericardial sac, or until the heart suddenly fails without such rupture. In the cases in which fresh acute occlusive lesions are not found and in which all of the occlusive lesions are old, indications of acute occlusive episodes in the past are found in the not infrequent presence of healed myocardial infarctions which have undergone replacement fibrosis.

In the relatively small number of cases of sudden deaths from occlusive coronary artery disease, in which a fully developed fresh myocardial infarct is also evident, a process requiring days to develop to the stage in which it is encountered, the circumstances in some of these cases suggest a complete absence of disability or of any symptoms of distress up to the very time of death. For example, we have encountered several fatalities from occlusive coronary artery disease with fresh acute occlusion in one of the involved vessels and extensive fresh fully developed myocardial infarction and, in these cases, the stomach was found full of food and drink of a kind that one would hardly expect a sick person would have any desire to consume.

In one such case, the deceased was a middle-aged white man, without suggestive prior symptoms, who had traveled to the city from the suburbs with his wife to attend a banquet in a hotel, only to drop dead on the way home in the lavatory of the railroad station. One might say that the deceased probably had gone protestingly to the banquet to please his wife, but the tremendous amount of food and drink in his stomach suggested, more

reasonably, that he had felt well enough and had the appetite and desire to eat and drink, hardly the inclination one would anticipate in a person if he were actually suffering discomfort from a massive myocardial infarct.

In another more recent case, a man in late middle age was found dead in his room in a lodging house where he resided. His heart revealed occlusive coronary artery disease with fresh acute occlusion by hemorrhage into a plaque and luminal thrombosis in a sclerotic segment of the right coronary artery and a fully developed large infarct in the myocardium of at least a week's duration. His stomach also was full of recently ingested food, including many large, poorly masticated pieces of frankfurter, hardly the type of food a sick person would select if he were actually distressed by the effects of such a large myocardial infarction.

In England, where official autopsies are done more routinely in cases of medically unattended natural death, even among the elderly, my forensic pathologist friends tell me that sudden death from spontaneous rupture of fully developed myocardial infarcts is not rare, there being no suspicion of the infarction until the fatal rupture occurs. There is no question that many individuals have sustained a myocardial infarction of substantial size with very little in the history to suggest that such a severe significant lesion had developed. Not infrequently, hearts have been encountered with evidence of one or more healed infarcts and with concomitant occlusive coronary artery disease without any corresponding history of disability in the past and with an uninterrupted history of work activity. The lesions in coronary arteries, in the 75 per cent of deaths from occlusive coronary artery disease confirmed by autopsy, even though they have progressed asymptomatically, are not gradual in their development. The more completely one studies the old sclerotic lesions in the coronary arteries, the more evident it becomes that the progressive sclerotic process is, from time to time, punctuated and abruptly added to by acute complicating episodes of hemorrhage into the atheromatous plaques, or acute luminal thrombosis, or both, with components derived from the hemorrhage in the form of cholesterin crystals and cholesterol and blood pigment becoming

incorporated in the atheromatous plaque. As one studies the complex composition of atheromatous plaques in various stages of their evolution, one can observe the transformation of hemorrhage within a plaque into the complex component parts of the plaque. The frequent occurrence of hemorrhage from capillaries in atheromatous plaques without, or in association with luminal thrombosis as an acute complication of the arteriosclerotic occlusive process was pointed out by Paterson, 25 years ago. That such hemorrhages add to the substance of the plaque and can provide an acute occlusive mechanism with or without a luminal thrombosis, becomes evident when the coronary arteries are studied completely and by the method of serial section. In a study, which is part of the project on the relationship of strain and trauma to heart disease now being conducted in the Department of Forensic Medicine of New York University School of Medicine, and the Office of Chief Medical Examiner in Manhattan, the hearts of persons who have died suddenly and unexpectedly from occlusive coronary artery disease are being extensively examined by the method of serial section of the involved segments of the coronary arteries. In this series of cases, the correlation between the incidence of acute luminal thrombosis and hemorrhage into an adjacent atheromatous plaque is approximately 80 per cent. This study is still in progress and is also concerned with a correlation between such deaths and the circumstances preceding them. It should be emphasized, however, that in approximately 75 per cent of the cases studied, the entire occlusive process in the arteries is old, but in this larger group there is evidence that old acute complications of intimal hemorrhage and/or luminal thrombosis in the involved coronary arteries had punctuated and added to the more gradually progressing occlusive process of atherosclerosis.

In the examination of the hearts of these cases, one encounters recent and older acute occlusive lesions which, to the naked eye and on random section, appear to represent luminal thrombosis. However, histologic section of these lesions establishes that they are not luminal thrombi, but consist entirely, or for the most part, of organizing hemorrhage into an atheromatous plaque with resultant marked narrowing and displacement of the lumen which is inconspicuous, or not evident on gross examination. Although

the over-all sclerotic process is progressive over a long period of time, the chronic gradual process is punctuated and made more severe by acute episodes of hemorrhage into plaques or luminal thrombosis. The remarkable thing is that such acute occlusive complications in the past, as well as the entire gradually progressive process, appears to have been almost entirely asymptomatic in many cases.

In a recent study by Texon, the localization and sites of formation of atheromatous plaques were demonstrated to take place at definite points in the arterial circulation, phenomena dependent on hemodynamic factors of rate of flow, curvature and tapering of the vessels and their degree of attachment. The hemodynamic factors can be considered primary with regard to the localization of the atherosclerotic process; other factors such as heredity, diet and tissue fabric, must operate to explain the variation of the extent of the disease and occurrence of complications in different individuals, races and animals.

Caution is advised against diagnosing all sudden and unexpected deaths in middle and old age as having resulted from occlusive coronary artery disease merely on the basis of their frequency for, obviously, the disease may only be an incidental finding even when demonstrated in substantial amount at autopsy. There has been justifiable criticism concerning the almost casual way in which such sudden deaths have been attributed to it because anatomical evidence of the disease was found in the heart during an incomplete autopsy, or in cases in which death was certified without autopsy.

In view of the fact that the lesions of this disease, in most cases, have been in existence for a long time prior to death and fresh acute complications, such as a necessarily fatal ruptured myocardial infarct, or even a not necessarily fatal fresh or recent acute occlusive lesion in a coronary artery, are not encountered in most of these sudden deaths, the importance of autopsy verification is evident. It behooves the forensic pathologist to make his autopsy investigation a complete one to demonstrate a sufficient amount of occlusive disease of the coronary arteries and eliminate not only other unsuspected natural causes of sudden death but, more especially, less obvious violent causes of death. Before con-

cluding that a death was caused by occlusive coronary artery disease, the circumstances surrounding the death and the possibilities they suggest must be carefully considered, in addition to all the autopsy findings which, in many cases, should include a clinical examination. The same amount of occlusive coronary artery disease may be the cause of death in one individual but, in another, it may be an incidental finding or a circumstance leading to death from another unsuspected and not obvious cause.

Some sudden deaths, during bouts of acute alcoholism and during the tapering off period, occur in such a manner as to simulate a death from occlusive coronary artery disease and, in fact, some deaths from that disease can be precipitated by overindulgence in alcohol. The cause of death in such cases may be difficult to resolve. Rapidly acting poisons, like cyanide, and the more rapidly soluble and absorbed barbiturates may be overlooked as the actual cause of death in a person in whom substantial amounts of coronary artery disease exist. Such errors are more apt to occur in those jurisdictions in which bodies are routinely embalmed prior to autopsy. Embalming destroys the possibility of detecting cyanide and alcohol and renders the detection of barbiturates and other hypnotics more difficult.

When a sudden death occurs while an individual is dining, the fact that he or she is middle-aged or elderly and may or may not have had previous complaints suggestive of occlusive coronary artery disease, is not sufficient basis for concluding that death had resulted from that commonly fatal disease. Nor is the fact that the deceased's face had become pale or, more usually cyanotic, or that he did not complain, or was able to get up from the table and walk a short distance before collapsing and dying, sufficient evidence that he suffered a fatal heart attack. Although such cases are encountered frequently by the medical examiner and in almost all it can be easily demonstrated that the sudden "apparently natural" death had resulted from choking on a large, poorly masticated bolus of food during the act of attempted swallowing. The bolus is usually a large piece of steak or chunk of lobster that was being greedily devoured. The impaction of a large bolus of food in the throat, either overlying the aperture of the larynx or actually lodged in it, can kill as rapidly as, and

closely simulate, a sudden death from heart disease. It is surprising how often, when a physician is called in such a case, he is deluded by the suddenness of the death, does not suspect choking at all and is quite certain that death resulted from "coronary thrombosis."

Most cases of fatal choking on a bolus of food happen in plush restaurants. It is amazing how an otherwise well-behaved and well-mannered individual will attack a choice sirloin steak and cut it up into three or four pieces which he will then proceed to devour, masticating each of the large pieces with a few chomps of his artificial teeth and then recklessly swallow the succulent chunks only to have one, literally, stick in his throat. Death can be instantaneous, or the embarrassed distressed victim may pick himself up from the table, walk a few steps and drop dead without anyone of his otherwise intelligent friends and associates having had the slightest idea of what had actually happened. Instead of placing such emphasis on what foods a person should eat to keep his arteries from growing hard, there should be more education on how to eat without choking to death.

Generally speaking, the most rapid sudden deaths are caused by disease, usually some form of heart disease of which occlusive coronary artery disease is the most common. Traumatic injury usually does not cause instantaneous death except in cases in which there is obvious gross injury incompatible with survival and in the more subtle of these, easily overlooked because unsuspected types of trauma which are now under discussion. The sudden death of a person who was a passenger in a moving vehicle, even in the absence of external signs of injury, or one who is found dead under circumstances suggesting the possibility of a fall from a height or down a flight of steps, should require an examination of the cervical spine for possible fracture with injury to the spinal cord. In several such cases, in which the family of the deceased supplied information about preexisting coronary heart disease, which was revealed at autopsy, the examination of the cervical spine disclosed a fracture of the adontoid process and severe contusion of the corresponding segment of the spinal cord. This type of injury is easily overlooked if the pathologist does not take the trouble to seek it out.

Another type of fatal injury in which death is sudden and can be erroneously attributed to coronary artery disease is electrocution, especially by low tension currents of electricity used as a source of power for various types of machines and devices in industry and in the home. The circumstances of the death in such cases are extremely important to determine and may be the only basis for the correct determination of the cause of death. When a man working with an electrically driven machine, such as a hand drill, on a hot, humid day, suddenly cries out and immediately collapses and dies, the possibility of electrocution is real and has to be explored. The sudden death, except for the autopsy, may simulate a death from heart disease. In these cases, there may not be any electrical burn at the point of contact or the burn produced by the passage of the current may be small and inconspicuous and escape detection if it is not carefuly looked for. I dare say that people have been accidently electrocuted and the prior history of coronary artery disease and the finding of such disease in substantial amount at autopsy have led to the erroneous conclusion that the individual died solely of a heart attack. In some cases, the inconspicuous electrical burns were overlooked; in others, they were absent and in the absence of knowledge of the circumstances, the possibility of electrocution was not considered.

The role of coronary artery disease in bodies recovered after submersion is also difficult to evaluate. The fact that it is present and severe does not establish that death was caused by it. In such cases, occlusive coronary artery disease may represent the cause of death, or it may be a circumstance which caused the deceased to drown, or it may be an entirely incidental finding unrelated to the cause of an accident, or an accidental cause of death as in a recent case in which a submerged body was recovered from a drainage ditch. All the circumstances indicated that the deceased had gotten into difficulty, probably as the result of prior intoxication, and had actually been able to escape from the partly submerged automobile, which he had been driving, only to fall into the water where his submerged body was subsequently found. In this case, the autopsy was not done until after the body had been embalmed and one of the coronary arteries was described as thrombosed, but this was not verified

by microscopic study. Even assuming that there was a coronary sclerosis and thrombosis, such findings in themselves do not prove that death resulted from that cause. Persons can survive with coronary thrombosis but cannot survive submersion. In the evaluation of any disease, not necessarily fatal, it is important to exclude other conditions, natural and thrombotic, which may be more subtle but which necessarily take precedence as a cause of death.

PRESIDENT KIRKLAND — Thank you very much, Milt. This has been very illuminating, indeed. This is the type of thing that is of primary interest to us in our work, and I think it is very refreshing and stimulating to see a demonstration of what actually goes on in some of these cases.

Due to the lateness of the hour, I wasn't going to have discussion, but he's in enough trouble, anyway, so we'll have a question or two.

DR. KIESSLING — If coronary artery disease is the first cause of sudden death in apparently healthy individuals, do you have any idea what the second, third or fourth causes of death are?

DR. HELPERN — In our experience in the Medical Examiner's office — and I say this only on the basis of the cases in which the cause of death has been demonstrated by autopsy — the second most common cause of unexpected natural death is lobar pneumonia. In a study of 2,000 autopsies of cases of sudden and unexpected natural death about 9 per cent were deaths caused by lobar pneumonia, which is quite remarkable because the study was made at a time when chemotherapeutic agents and antibiotics were already in use. These cases did not come from the hospitals but from the streets and cheap lodging houses. A good many of the victims were alcoholics, who had never sought medical attention.

The third most common cause, or perhaps the second if you combine all the hemorrhages, is from spontaneous intracranial hemorrhage; about half the cases from hemorrhage in the basal ganglia, associated with arteriosclerosis and hypertension, and the other half from aneurysms in various parts of the brain. Most of the latter are cases of subarachnoid hemorrhage from the rupture of aneurysms around the circle of Willis.

PRESIDENT KIRKLAND — Thank you very much, Milt.

Now for the next paper, which will be delivered by Dr. C. Marshall Lee, Jr., Assistant Medical Director of the John Hancock Mutual Life Insurance Company. This has a pretty important impact on our underwriting practices — "Advances in Surgery: Their Effects on Medical Underwriting."

In the ordinary course of events, we don't give a detailed introduction of our own members, but Marshall has been with us for about two and a half years, and I would just like you to know he is a graduate of the University of Virginia, 1935, and had postgraduate training in Cincinnati and California. He has been Assistant and Associate Professor of Surgery at the University of Cincinnati and Director of Surgical Service at the Children's Hospital in Cincinnati. He belongs to quite a number of surgical societies and is eminently qualified to bring us up to date on this very important and somewhat neglected side of underwriting.

ADVANCES IN SURGERY: THEIR EFFECTS ON MEDICAL UNDERWRITING

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Before an audience such as this, much more experienced than I am in all matters pertaining to medical underwriting, it would be presumptuous to review in detail the history of substandard risk selection. It is appropriate, nevertheless, to mention the classic studies of Rogers, and later of Rogers and Hunt,[2] which, in 1904, resulted in a systematic method for balancing special hazards with proportional premium increments. Prior to this, insofar as medical underwriting was concerned, only two categories were required — the standard risk, and the rejection. As with every major innovation, several years passed before the advantages of the method were recognized sufficiently to achieve general adoption throughout the industry. It may be said that medical selection, in the modern sense, has been in use less than 50 years.

In 1958, 1 in 20, or 5 per cent, of Ordinary Life Policies placed were in the extra risk category, a total of 400,000 policies with a value of 3.2 billion dollars. At the start of the present year, 5 million extra risk policies were in force, and valued at 17.64 billion dollars.[7]

When extra risk selection first came into use, prudence required that the unfamiliar methods be cautiously applied, and early progress was slow. Yet the foregoing figures amply demonstrate that accumulated experience in underwriting substandard risks now enables millions of people to have life insurance who could not have had it, at any price, at the turn of the century. The purpose of frequent re-examination of medical underwriting procedures is to find out if there are still others, ineligible or faced with extremely high rates under present rules, who might be given more favorable consideration.

Many factors have contributed to the liberal trend in medical selection. For one thing, it is clearly a beneficial result of competitive pressures. More important, however, is the enormous progress of medical science, both in its clinical application and in the effectiveness of public health and sanitation methods. A steadily rising longevity curve, (at all but the most advanced ages) has resulted, and there is thus a large body of actuarial experience to encourage liberal medical selection. It is necessarily of a very general nature, however, and most of the revisions in the practice of medical selection remain either entirely empirical, or they are based upon inferential reasoning from indirectly applicable data.

This is especially true of risk selection as related to surgical conditions. In common with all medical hazards to longevity, mathematical precision in the evaluation of individual risks is an unattainable ideal. Selection and prediction can be, at best, no more than an approximation. It would be impractical or impossible, for example, to tabulate and classify every surgical operation performed in the United States in 1959 and to compile adequate follow-up records of all patients involved, to the ends of their lives. If this could be done, it would provide quite a precise yardstick for the evaluation of surgical hazards in life insurance, yet its application would still be limited to the standards of surgical achievement in 1959. It seems fair to assume that surgical progress will be as rapid in the next 50 years as it has been in the past 50. Data evolved from experience based on 1959 would, therefore, be obsolete before it could be assembled.

The remarks that follow will consequently have no background of direct and specific statistical analysis. Yet, if the essential function of medical selection is to make life insurance available, within the reasonable limits of good judgment, to all who desire it, and if progress in both medical science and in insurance appears to justify more flexible attitudes in medical selection, it is important to look for a way to apply them promptly and intelligently.

To examine, even in summary, the whole range of surgical disorders in relation to life insurance risks would be a full-time occupation for one or several people for several years. To attempt

to report such a study, in a single paper, even if the study had been done, would by comparison make the Boston Marathon look like a fifty-yard dash. For convenience and economy of space and time, a few selected topics will be considered as representative of the situation as a whole. It should be noted also that only life insurance is under consideration and that none of these would apply, without radical revision, to accident and sickness underwriting, in which different principles apply.

1. Standard Elective Procedures:

While to a clinical surgeon the term standard elective procedure is both distasteful and contradictory, it does have usefulness to us, as a basket into which one group of surgical hazards can be separated from the others.

One of the most common of these is hernia. Comparison of the medical underwriting manuals of several major companies discloses that, with minor variations, all hernias except those through the diaphragm are grouped together and, for underwriting purposes, are treated alike. The more cautious suggest that if surgical correction is contemplated, action should be postponed until after recovery. Nearly everyone agrees that postponement is usually unnecessary, yet this conclusion does not entirely relieve the necessity for some exercise of judgment.

To take an extreme example, comparison may be made of the ubiquitous and benign umbilical hernia of childhood with the enormous umbilical extrusions occasionally encountered in multiparous women. More than three-fourths of childhood umbilical hernias disappear spontaneously when the child begins to walk. Most of them are asymptomatic, and surgical correction is indicated only when symptoms are present or when spontaneous closure has failed to occur after the child has been walking for a year or two. When operation is required, it is a comparatively simple procedure and the mortality is virtually nil. Recurrence, unless some untoward complication such as wound infection has occurred, is almost unheard of.

The giant umbilical hernias sometimes seen in multiparous women are very different. In effect, they are more like the omphaloceles of infancy, to which the more commonplace term umbilical hernia should not apply, in spite of similarities in origin.

When these exist, the risks of strangulation obstruction are ever present. The surgical correction of any other abdominal lesion, such as cholecystectomy or oophorectomy becomes vastly complicated. The repair of these large hernias carries a mortality rate of 50 per cent or more. The hosts to such "king-sized" defects, although listed on paper as umbilical hernias, must be considered unacceptable risks.

The point is that when the presence of a hernia, whether it be umbilical, inguinal, femoral, or incisional, is noted, some judgment needs to be exercised. Lay underwriters or approvers should not be given blanket instructions to disregard them. Hernias are seldom reported except on medically examined applications, and the examiner may be relied upon to furnish information about the size, location and reducibility of a hernia and about coexisting hazards to surgical correction, such as obesity, heart disease, diabetes, bronchiectasis, or severe asthma. These need to be given appropriate consideration, and postponement or rating may amply be justified. Short of this, the mortality rate of hernia repair, under modern surgical standards, is so low that the risk is probably less than it is for unsuspected or undisclosed hazards such as carcinoma of the stomach or colon, not yet clinically recognized, or for unpredictable risks such as acute appendicitis. Therefore, the increasing trend toward disregarding hernias as an underwriting hazard is probably safely applicable to 95 per cent of cases. The remaining 5 per cent can be separated from these with minimal selective judgment which can fairly easily be conveyed to lay underwriters and approvers, or can be effectively summarized in a manual.

To touch briefly on another category of so-called standard elective procedures, I confess to a certain personal uncertainty, which others may also feel, over the classification of peptic ulcer histories in terms of the number of "attacks." To me, at least, the term is inexact and hard to interpret when applied to peptic ulcer, and nearly as much so in connection with chronic cholecystitis and cholelithiasis.

For peptic ulcer, the duration or recurrence of symptoms under conscientious treatment, a history of significant bleeding, symptomatic or radiological evidence of impending or potential

obstruction, or a history of perforation are the pertinent considerations. Moreover, I believe that recalcitrance to treatment is more significant in gastric ulcers than it is in duodenal ulcers, because the risk of malignancy in the former is a definite one.[10] The impairment studies to which I have had access impress me as insufficiently explicit with respect to the location and behavior of peptic ulcers and to the type of operation performed. If collateral risks such as those mentioned in connection with hernia are excluded, I believe that uncomplicated cases of duodenal ulcer which have responded promptly and completely to medical management can safely be assigned standard rates within six months of such treatment. In those which present the less favorable aspects noted above, I believe a moderate permanent rating is more realistic than is a temporary dollars-per-thousand rating. Finally, with due concessions to my personal surgical background, I believe that cases that have undergone adequate modern definitive surgery, such as gastric resection, with or without vagotomy, with restoration of body weight and freedom from symptoms for a year, even if modest dietary restrictions continue, can also be considered standard risks.

The application of judgment to risk selection seems to me to be more highly specialized for peptic ulcer, gall bladder disease and other conditions in which potential recourse to surgery exists than it is for hernia. Probably more of these cases should be referred for evaluation by a physician than is customary now. I believe that many substandard ratings based on an uncertain estimate of "attacks" could be avoided, and that extra premiums would more consistently be required where they are explicitly needed.

2. Congenital Anomalies and Defects:

A good many companies still do not accept substandard risks in applicants under 15 years of age. At least 107 companies do accept them under individual contracts,[12] and nearly all must evaluate substandard juvenile risks under the increasingly popular family plans. Advances in Pediatric Surgery have greatly increased the range of insurability in children. It would not be possible, within the available limits of time and space, to give individual consideration to each of the many anomalies

which constituted uninsurable hazards as recently as 10 years ago, and which now need give little or no concern.

Probably the most important single item of information that is needed, when a congenital anomaly is reported, is a statement from a responsible and qualified attending physician that careful examination has failed to disclose any other defect than the one reported. Congenital defects are frequently multiple, and the incidence of associated anomalies is greater in some structural systems than in others. For example, spinal defects are frequently associated with anomalies of the genito-urinary tract, especially those of the upper urinary system.[9] In males, defects of the urinary tract are so commonly associated with imperforate anus that a diligent search should be made for them as soon as the imperforate anus is recognized. Tracheoesophageal fistula, which was uniformly fatal until 10 years ago, is now quite consistently correctable. It carries with it an extremely high incidence of coexisting, and usually less obvious defects in other anatomical areas. Associated structural anomalies of the heart, the bowel, the kidneys or the spine are very common and the detection of their presence may require considerable clinical study. In Gross's series of 233 cases, 33 per cent had one or more of such associated defects.[5]

About 12 to 15 per cent of infants with duodenal atresia will turn out to be mongoloid idiots and the stigmata of the latter condition may not be clearly apparent in the first 36 to 72 hours of life when the atresia must be corrected. The remaining 80 to 90 per cent of cases usually have no other defects, and once a normal pattern of growth and development has been established, after effective surgical correction, these infants may be considered standard risks.

Congenital megacolon, considered an unacceptable risk until 10 years ago, and still declined by many companies, now carries a very favorable outlook after competent, successful surgery. The operation is difficult and the incidence of rectal stricture and other complications is still distressingly high except in unusually skillful hands. The incidence of associated anomalies is relatively low. If a year has passed since operation, if the absence of rectal stricture is reliably reported, if a normal pattern of spon-

TABLE I
DEVELOPMENTAL DEFECTS (SURGICAL)

Commonly Correctable Defects Usually no important additional anomalies	Primary Defect Usually Correctable Watch out for serious, but less obvious additional anomalies	Congenital Defect Serious Correction often unsatisfactory. Collateral defects often serious
Craniosynostosis	Severe cleft palate	Encephalocele
Prominent ears	Tracheo oesophageal fistula	Meningomyelocele
Hare lip	Malrotation of colon (with or without midgut volvulus)	Hydrocephalus
Minor degree of cleft palate	Annular pancreas	Major cardiovascular anomalies
Thyroglossal duct cyst	Imperforate anus (males)	Omphalocele
Branchial cleft cyst	Coarctation of aorta (short)	Ileal atresia (variable)
Congenital cyst of lung	Patent ductus arteriosus	Meconium ileus
Congenital diaphragmatic hernia	Pure pulmonic stenosis (corrected by *open* operation)	Meconium peritonitis
Duodenal atresia (watch out for mongolism)	Small septal defects (corrected by primary suture, without prosthesis)	Extrophy of bladder
Local duplication of bowel (enteric cyst)	Hydronephrosis – unilateral or bilateral	Any combination of two or more obvious developmental defects
Congenital megacolon (corrected)	Bladder neck obstruction	
Imperforate anus (females)	Syndactylism or Polydactylism	
Umbilical hernia	Cavernous hemangioma	
Single, uncomplicated renal cyst	Cystic hygroma	
Hypospadias		
Undescended testis		
Capillary hemangioma		
Single supernumerary digit		
Clubbed feet		

taneous and controlled bowel movements has been established, and if no other anomalies have been found, these children may confidently be regarded as standard risks.

Another of the defects now regularly correctable is craniosynostosis, the premature fusion of the sagittal or horizontal sutures of the skull, or both. If it is not corrected, bizarre deformities of the skull, or various degrees of microcephaly result, with associated feeble-mindedness. If surgical correction is early and effective, as it now very commonly is, these children are usually normal and healthy.

Some of the relatively uncommon defects must still be declined, without further investigation. Examples of these are large omphaloceles (already mentioned in connection with umbilical hernia), extrophy of the bladder, polycystic kidneys, and meconium ileus. In this latter condition, the complete ileal obstruction present at birth is only a reflection of underlying defective exocrine morphology and function in the pancreas. Associated disturbances in the tracheobronchial system and the liver as well, are consistently present. Until 10 years ago, the mortality of meconium ileus, a disease of the newborn infant, was 100 per cent, with or without operation. The question of insurability never arose. Since then the contributions of Hiatt, Gross and others have resulted in a 40 to 60 per cent survival rate after operation. These children can survive, and we occasionally receive applications to insure them. The basic disorders of the pancreas, the liver and the tracheobronchial tree remain unchanged, even when the imminently lethal intestinal obstruction has been successfully overcome. Death from pulmonary or nutritional complications usually occurs within 1 to 12 years and these children must be considered unacceptable as insurance risks.

Consideration of congenital defects of the heart and great vessels has been purposely omitted because these have been discussed before this Association in recent years, by authorities much more competent than I.

It should be clear, however, that many of the surgical conditions of childhood that were properly considered uninsurable a few years ago may now be looked upon with considerable underwriting equanimity. It is essential to establish first that the particular

defect in question has been successfully and permanently corrected. Next, it is important to know whether or not other hazardous, but less obvious defects are present. If both of these questions can be favorably answered, these children are as safely entitled to insurance protection as are their contemporaries who were fortunate enough to have been born completely free of developmental defects.

3. Neoplasms

The subject is too large to permit anything but the selection of a few special situations for illustrative comment. I approach it with considerable diffidence, because so much has already been said and written about it. Nevertheless, a few points may be raised, if only for the sake of discussion.

One of these is so-called carcinoma in situ. Considerable uncertainty arises in most medical underwriters' minds when this diagnosis is reported. I do not pretend that I can resolve all of these uncertainties and would offer only a few rules of thumb which seem practical in the present state of knowledge. An important and comprehensive review of the subject was published by Fennel and Castleman in 1955.[4] This embodied their own broad experience, supported by 135 references from the literature. Their opening paragraph merits direct quotation:

"Under the term carcinoma in situ, Broders, in 1932*, described a group of lesions characterized by the appearance of certain abnormal types of cells within the normal confines of the epithelial layer. These cells manifest, in appearance or in behavior, various features that are characteristic of the cells of malignant tumors. They may entirely replace the normal epithelial cells over considerable distances, but they do not pass the barrier of the basement membrane and invade underlying tissues. The majority of these lesions were considered for many years to be 'precancerous'. Today, the preponderance of opinion is that they are a form or stage of actual cancer, as the name carcinoma in situ and its synonyms, intraepithelial and noninvasive cancer, indicate. Since there are no characteristic symptoms or physical findings, the diagnosis of carcinoma in situ is entirely a histologic problem."

*Rubin devised the term in 1918.

This is to say that a clinical diagnosis of carcinoma in situ is consistently undependable, since it cannot be made by gross inspection. The grossly visible carcinoma is already beyond the stage of carcinoma in situ and it is appropriate to underwrite it as one would any other malignant tumor in its category. Carcinoma in situ is correctly recognized only as an incidental finding in the histologic examination of tissue already surgically removed. That the lesion may be suspected from Papanicolaou smears is highly important with respect to the uterine cervix. Herein undoubtedly lies the most valuable single application of exfoliative cytology, but it cannot distinguish between pre-invasive and invasive cancer. This can only be done from a paraffin section.

Carcinoma in situ is described in the skin, (e.g. Bowen's disease and variants of it) in the vulva, the anus, the mouth and pharynx, the larynx, the lung, the eye, the gall bladder (in the margin of papillomas), in the upper and lower urinary tract, in the breast, and in the gastrointestinal tract (as in the margins of adenomatous polyps). In every instance, some grossly visible lesion, or evidence from exfoliative cytology has led to excision of the affected area, and the diagnosis is then made from a stained section by a competent pathologist.

For underwriting purposes the surgical management of these various lesions need not be reviewed. One principle conclusion seems justified. When carcinoma in situ is recognized in the cervix of the totally removed uterus, the entire organ susceptible to this particular carcinogenesis has been excised and this risk has been eliminated. It would seem logical that these patients could properly be considered standard risks.

This conclusion should not be construed to suggest that total hysterectomy is the only correct treatment for carcinoma in situ of the uterine cervix. There is good clinical and pathologic evidence to indicate that a well performed conization of the cervix in properly selected cases is just as effective in producing long-term cures. Evaluation of this procedure goes on in several centers and the recent report of Krieger and McCormack[6] is an example of it. No criticism of the clinician should accrue when this conservative treatment is elected. From an insurance standpoint, however, the reasoning based on complete elimination

of the cancer potential of the uterus would not apply. The risk may well be just as favorable in the more conservatively treated cases, but perhaps the accumulation of more long-term clinical experience with the method should be awaited before standard rates could be offered with the same assurance.

To a comparable degree, but for a different reason, carcinoma in situ in the skin might also be considered a non-ratable impairment, except in unusual circumstances. This is not because the whole skin has been removed, but because these lesions are rarely more formidable than basal cell carcinomas, for which favorable consideration is usual.

Carcinoma in situ anywhere other than the uterine cervix and the skin would seem to demand a good deal more caution. When, for example, it is recognized in one or more polyps of the colon, or in the margin of a gastric ulcer, even when these have been widely removed, the situation is different. Malignant tumors of these structures have a strong tendency toward multicentricity. In other words, several tumors may simultaneously arise at widely separated points in the same organ. The fact that one such tumor has been removed, no matter how early and microscopically circumscribed it may be, only points to the likelihood that the cancer predilection is present in that particular organ, and that there may be other tumors, now or later in the same organ.

This is not to say that every patient in whom a carcinoma in situ has been discovered in a sigmoid polyp should have a total colectomy. Far from it! But from the standpoint of medical selection for life insurance, such cases demand considerably greater conservatism than do those of the uterine cervix in which a total hysterectomy has been done.

I would like to refer briefly to two other classes of neoplasm which, in underwriting surgical impairments, I assume to be as perplexing to others as they are to me. These are carcinoma of the thyroid gland, and malignant tumors of the testis. In both of these glandular structures the range of malignant potential is nearly as broad as that between basal cell carcinoma and malignant melanoma in the skin. It has, I believe, been generally customary to place all carcinomas of the thyroid and testis among Class I

TABLE II
CANCER OF THE THYROID GLAND

Natural Behavior	Morphological type	Usual functional capacity
Very low grade malignancy	1. Follicular carcinoma "Benign metastasizing adenoma"	About ¾ of these tumors take up iodine
Generally low grade malignancy	2. Follicular adenocarcinoma 3. Papillary carcinoma 4. Papillary adenocarcinoma 5. Hurthle cell carcinoma 6. Non-encapsulated sclerosing adenoma	About ⅓ of these tumors take up iodine
Variably malignant	7. Epidermoid carcinoma (rare; less than 1% of thyroid tumors —*no* iodine uptake)	
Highly malignant Treatment rarely successful	8. Undifferentiated carcinoma a. Small cell carcinoma b. Giant cell carcinoma	Sometimes take up some iodine, but ineffectual
	9. Fibrosarcoma — No iodine uptake	
	10. Lymphoma (Usually a manifestation of disseminated systemic lymphoma) — No iodine uptake	

Data adapted from: Warren, S., and Meissner, W. A. "Tumors of the Thyroid Gland"

tumors, which carry very severe underwriting restrictions. I believe that perhaps a third of the applicants in each of these two categories deserve more favorable consideration.

With respect to the thyroid gland, the range of malignant neoplasia embraces at least 10 different morphological categories. The natural history of those at the upper end of the spectrum, irrespective of treatment, is one of slow, non-lethal progression even after metastasis has occurred. At the other end of the list a rapidly lethal course is the rule. In addition to this natural dividing line among thyroid cancers, the advent of radioactive iodine has introduced a further important distinction.

As J. H. Means noted some years ago, the thyroid cell, as the functioning unit of this amazing endocrine gland, is entirely unique. It has no counterpart in all known animal biology. It is the only cell in existence capable of executing the following complex series of chemical maneuvers. First, on its peripheral or capillary side, it extracts from the circulating blood three primary ingredients, tyrosine, iodine and globulin. It synthesizes thyroxin from the first two, conjugates it with the protein and then secretes it through its central cellular surface into the follicle for storage as thyroglobulin or colloid. Then, in accordance with the metabolic homeostatic demands of the body, it withdraws the stored hormone, again through its central surface, and releases it into the circulation through its capillary surface. It is at once a raw materials broker, a factory, a warehouse and a distributor. No other cell can do all these things, and all ingested iodine is either processed by it or is excreted.

When neoplasia occurs in this cell, if the imperfection of differentiation is sufficiently mild for the synthesizing function to be preserved, then radioactive iodine is a therapeutic weapon as unique as is the cell itself. Ingestion of I 131 makes of each functioning cell a miniature unit of self-destroying ionizing radiation. This is true even in metastatic implants in the lungs or elsewhere, provided the isotope is diverted to them by surgical ablation of the thyroid gland itself. The fully differentiated normal thyroid cell, as a more efficient unit than its neoplastic cousin, will monopolize ingested iodine as long as it is present.

Therefore, among functioning malignant tumors of the thyroid,

this combination of radioactive iodine and surgery is specific in a way that does not apply to any other form of cancer. The outlook for these patients is better than it is for those with other cancers for which less specific treatment is available. Again, as with cervical carcinoma in situ, a word of caution is advisable. The management of cancer of the thyroid remains one of the controversial questions in clinical surgery today. For several years a number of able surgeons, notably George Crile, Jr., of Cleveland, have advocated wide surgical resection of demonstrably affected portions of the thyroid and dissection of the regional nodes, followed by oral feeding of 2 to 3 grains of dessicated thyroid a day, in the treatment of papillary carcinoma of the thyroid. His recent report of 74 cases so treated, with an average follow-up of eight and a half years,[1] merits respectful attention. Other authorities recommend various combinations of surgical attack, with or without x-radiation or similar adjuncts. It would be inappropriate for us, as medical underwriters, to criticize one method of treatment as compared with another, since final answers to many clinical and pathologic questions may not be available for several years. However, when a given case does meet the necessary criteria for treatment by a combination of surgery and radioactive iodine, and a follow-up of three or four years indicates that treatment has been effective, such an individual becomes one of the increasing number of cancer patients whose outlook is exceptionally good. It seems reasonable, then, that if enough reliable information can be assembled about applicants who have had this type of cancer treated in this way, to separate them from other cases of thyroid cancer, they could be given very favorable underwriting consideration.

To a lesser extent, and with somewhat less clearly defined criteria for selection, the same thing might be said of certain tumors of the testis. The carefully controlled and documented study of Dixon and Moore[3] is largely the basis for the comments that follow. This is derived from 990 cases of testicular tumor, with long-term follow-up made possible by the facilities of the Federal Government.

The exact position of testicular tumors in the statistical hierarchy of cancer in the male is difficult to establish because

TABLE III
TESTICULAR TUMORS

Based on 990 followed cases —
Armed Forces Institute of Pathology
under contract to Veterans Administration

GROUP		Distribution as percentage of all testicular germinal tumors		Overall mortality — percent of operable cases, dying of tumor by time from operation	
		U.S. Army	All U.S. Males	2 years	5 years
I	Pure Seminoma	34.0	40.6	6.4	10.5
II	Embryonal carcinoma with or without seminoma	22.5	29.9	58.7	64.5
III	Teratoma with or without seminoma	10.2	9.2	26.1	29.2
IV	Teratoma with embryonal carcinoma and/or choriocarcinoma and with or without seminoma	31.1	19.0	47.9	52.2
V	Choriocarcinoma with or without embryonal carcinoma and/or seminoma	2.1	1.1	83.0	100.00
		99.9	99.8		

All data from Dixon and Moore "Tumors of the Male Sex Organs"

of the great variation in incidence of different types of tumor at different ages. For example, in early childhood Wilms' embryoma and neuroblastoma are prominent, to be succeeded later by leukemia and the lymphomas, and so on up through age levels where carcinoma of the lung, the stomach, and finally of the prostate occupy increasingly pre-eminent statistical positions. Any figure, with respect to males of all ages, is therefore only approximate, but for testicular tumors it may roughly be said to be between 5 and 9 per cent of all cancers.

From the standpoint of insurance selection, the important consideration is that the peak age incidence of testicular tumors is between the twenty-fifth and thirty-fifth years, the ages when the need for life insurance and ability to afford it begin to combine into a significant market. Twenty-five percent of testicular tumors occur in this age group, the remainder being distributed from puberty to age 65. Only 0.6 per cent of them occur after the age of 45, however. Ninety-six and a half per cent of malignant testicular tumors arise from the germinal cells of the testis. These range in severity from the relatively benign seminoma to the intensely lethal choriocarcinoma.

It is seen from Table III that about a third of the cases are pure seminoma which carries a five-year mortality rate of only about 10 per cent. The remaining two-thirds are distributed among a group of morphologically mixed tumors in which elements of seminoma are only a minor component. They range through embryonal carcinoma (incidence, 22.5 per cent) with a 65 per cent mortality in five years, to choriocarcinoma which, while comprising less than 3 per cent of all testicular tumors, has a 100 per cent five-year mortality.

Another of Dixon and Moore's tabulations emphasizes, still further, the difference between pure seminomas and other testicular tumors. Here (Table IV), the highly lethal choriocarcinoma group has been eliminated. The figures given represent, not overall mortality, but deaths from tumors, per 100 survivors at the beginning of each year. In the seminoma group, with its 10.5 per cent five-year mortality rate, it is seen that 3.2 per cent die in the first year. Of the 96.8 per cent alive at the beginning of the second year, 3.3 per cent will die by the end

TABLE IV

ANNUAL MORTALITY, FIRST FIVE YEARS AFTER OPERATION FOR TESTICULAR TUMORS

Rates represent number of deaths from tumors per 100 survivors at beginning of each year

Tumor group	Years after operation				
	1st	2nd	3rd	4th	5th
I	3.2	3.3	3.2	1.2	...
II	40.4	30.7	9.8	2.0	2.7
III	22.1	5.4	2.0	2.2	...
IV	30.6	24.9	7.5	.9	...

All data from Dixon and Moore
"Tumors of the Male Sex Organs"

of it. This means that 94.6 per cent of the original total will live into the third year. If we take these as 100 per cent of survivors to the third year, three more will succumb during that year, bringing the total to about 9 out of 100 in the first three years. In the fourth year the mortality drops by more than 50 per cent, and of those surviving to enter it, only one will die. By the time the fifth year is entered all deaths in the overall 10.5 per cent five-year mortality have occurred, and from the beginning of the fifth year on, no deaths occurred from tumor in the pure seminoma group. These figures, derived from complete follow-up of a significantly large series of cases, suggest that from the fifth year on, those applicants who have harbored a small testicular tumor which was histologically identified as pure seminoma, might well be considered standard risks. Again, the evidence required to separate these from the others would need to be explicit and reliable, but if this is provided, many applicants now being declined, or paying substantial extra risk premiums, could be insured at rates well within their means.

With respect to the medical selection of applicants with cancer histories, then, three representative categories have been selected, carcinoma of the cervix uteri, carcinoma of the thyroid, and carcinoma of the testis, which, generally speaking, are properly

considered to be high risk, Class I tumors in which survival, without evidence of recurrence, for at least 9 to 10 years is required before standard rates are usually offered. It is suggested that by more detailed discrimination and selection, a substantial proportion of these people could be given much more favorable underwriting consideration.

If time and space permitted, the list might be almost indefinitely extended. Certain types of carcinoma of the breast, many or most of the malignant tumors of childhood, and even a considerable number of brain tumors might be added to it, to mention only a few.

The point is that a healthy and proper respect for cancer generally tends to make the underwriting basket into which most cancers are placed an exceedingly capacious one. The untoward results of this are twofold. One is that many applicants who are actually favorable and desirable insurance risks are either being denied insurance or are forced to refuse acceptance of contracts so highly rated that they cannot afford them. Secondly, these are people (as distinguished from the more impersonal "applicants") in whom a justifiable and happy optimism has been assured by their attending physician or surgeon, and from whom the shadow of death has been cleanly lifted, whose confidence is shaken and whose hopes are shattered, when, believing themselves cured, a severely substandard contract is offered.

In conclusion, then, I believe that the life underwriting of many surgical conditions can be more liberal than it generally is now, provided that cases are judiciously selected on the basis of reliable and adequate information. I believe that this is especially true for many types and conditions of cancer, for many congenital defects and anomalies, and for many of the more common elective surgical conditions such as hernia or gastric resection for ulcer.

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PRESIDENT KIRKLAND — I have asked Dr. G. R. Collyer of the London Life, London, Canada, to comment briefly on Dr. Lee's splendid paper.

DR. G. R. COLLYER — It is with a certain amount of diffidence that I dare comment on Dr. Lee's excellent paper, since I am not a surgeon. However, my good friend, Harry, didn't give me the choice of saying whether I would or not; he said, "You will," and, knowing Harry, that was it.

I have listened to Dr. Lee's presentation with a great deal of interest, and must congratulate him on covering a subject of wide variations in such an able manner. He has certainly shown us how we can improve our underwriting in many cases.

It would have been interesting, if time permitted, to hear Dr. Lee discuss the tremendous advances in pre- and post-operative management that have reduced mortality so greatly and have allowed surgeons to perform procedures that, a few years ago, were considered so hazardous to life that few, if any, such procedures were undertaken. I refer, of course, to the control of

electrolyte balance, the control of shock, the control of hemorrhage, the control of blood clotting by the use of anticoagulants, the use of hypothermia and extracardiac circulation, the great improvement in the administration of anesthetics, etc. The surgeon of today must, in fact, be a well-trained internist as well as a specialist in diagnosis and surgical techniques.

It would also have been interesting to hear a discussion of those operative procedures which have been practically eliminated from the surgical field because of newer forms of treatment and techniques, and the effect of these on the more lenient attitude toward the underwriting of cases.

I would like to refer you to a very excellent article which has been published in the August 1959 Statistical Bulletin of the Metropolitan Life, "Surgery Much Safer." I think it contains many statistical evidences of the improvements in surgery.

In this connection, one thinks of the use of the Küntscher nail for the treatment of complicated fractures, where open operation would have been necessary previously, the elimination of many of the severely mutilating operations for such conditions as pulmonary tuberculosis by more modern forms of treatment, and many others.

Although I am in complete agreement, in most instances, with Dr. Lee's ideas as expressed in this paper, it is only human that there should be some difference of opinion. Dr. Lee says he believes that the cases that have undergone adequate modern surgery, such as gastric resection, with or without vagotomy, and with restoration of body weight and freedom from symptoms for a year, even if modest dietary restrictions continue, can also be considered standard risks. This seems to me to be a little optimistic when one considers the statistical evidence that is available to us. Also, when one considers that, as a rule, it is the worst type of ulcer, with complications, that usually comes to surgery, it is difficult for me, at least, to believe that the results of surgery are so good that, even after a year, there will be no recurrence of these conditions.

I was most interested in Dr. Lee's remarks on carcinoma in situ. This subject, which seems to be getting more attention in recent literature, is of great importance to those of us who are

responsible for medical underwriting. I believe the speaker has taken a very sound and practical approach to this subject, and I believe it should be most helpful to use when confronted with this problem.

Dr. Lee concludes his paper with a most convincing plea for more selective classification of the more malignant tumor, and two thoughts occurred to me in this regard. First, if we are to take a more lenient view toward the less malignant of this group, then we must, of necessity, take a more serious view of the more malignant types of cases, since, presumably, our rates are based on the group as a whole. This would require the establishment of new rating tables, which would have to be given consideration.

The second thought is that of the dependability of histologic diagnoses; since we must accept these from all parts of the country, and cannot demand the opinion, in most cases, of a top-flight pathologist, there might be some doubt in our minds at times regarding the accuracy of the diagnosis.

I would like to extend to Dr. Lee my appreciation for an excellent presentation.

PRESIDENT KIRKLAND — Thank you very much.

Our next speaker, who is going to give us a review of the total problem of public relations, is Dr. William P. Shepard, Chief Medical Director of a rival firm of ours that works in this town. I believe the name is the Metropolitan. Bill was in the Health and Welfare Division of the Metropolitan for a good many years, and that is where you have all known him. Now, he is one of us here in our active work. He has been extremely active in this type of thing for a long while, in the Tuberculosis Association, the Public Health Association, and so on. He is a member of the National Heart Advisory Council, National Heart Institute, Chairman of the Council on Industrial Health of the American Medical Association, and he has so many distinctions that I'm not going to fool around talking about them. All I'm going to do is to ask Bill Shepard to come up here, a man whom you all know and respect.

SYMPOSIUM ON OUR PUBLIC RELATIONS AND THE WORK AND AIMS OF THE HEALTH INSURANCE COUNCIL
A REVIEW OF THE TOTAL PROBLEM

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Chief Medical Director
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Strange things have come to pass for many of us whose medical careers have been largely devoted to the life insurance business. Many life insurance companies have entered the health insurance field fairly recently. Here, as those of us know whose companies have been in this field for some time, methods of operation, including underwriting, claim administration and sales are often quite different. The potential usefulness of the Medical Director and his staff to his lay colleagues in the business is greatly increased.

Two years ago, Mr. Albert Whitehall[1] of the Health Insurance Council reported to this meeting the astounding growth of health insurance. He is here to bring us up to date today. At the risk of stealing a little of his thunder, let me give you just two facts to emphasize our growing responsibilities in the field of health insurance. In 1940, only 12 million people had *some* kind of health insurance. At the end of 1958, there were 123 million people with *some* kind of coverage, a tenfold increase. This includes coverage by Blue Cross and Blue Shield and the so-called independent plans, as well as private insurance companies. Not only do many more people have protection, but the coverage is much broader than formerly. Still broader coverage is yet to come under the present free enterprise, competitive system. This is one of the most significant socio-economic-medical phenomena that has occurred in the history of insurance.

Many here today have not been long exposed to the interesting and intricate medical problems connected with health insurance. Indeed, it presents major medical relations problems as well as new problems in public relations.

The nub of the problem is that we indemnify for the cost of services rendered by relatively few, the exact cost of which we cannot estimate with our usual accuracy. Most of us have tried to provide a type of coverage which would adapt itself to existing patterns of medical and hospital care. We have no desire to regulate medical practice or hospital administration. We do seek to understand their present practices and, insofar as is humanly possible, their future intentions. Only thus can we find a sound basis upon which to estimate costs and thus determine fair premiums.

Traditionally, those in the medical profession have been individualistic and slow to change from established patterns of medical practice. They have been engrossed in the art and science of medicine and, for the most part, have spent little time on the economic aspects of their practice. They have left world and national economic problems to others. Some of us, however, have chosen to associate intimately with the business aspects of medicine and those of us in insurance have been virtually thrust into the business by the advent and development of health or accident and sickness insurance during the past two decades.

It seems clear to me that we must anticipate that medical directors of insurance companies and their staffs will be drawn more and more into advising their colleagues in the insurance business concerning the medical and public relations problems inherent in the health insurance business. It is with this in mind that I venture this brief review of the over-all problems as I see them.

The Insurance Company

The problems of the actuary in health insurance were well described at this meeting two years ago by Mr. J. Henry Smith[2], Vice-President of the Equitable and then President of the Health Insurance Association of America. May I just pick up where he left off.

Many of the problems with which we struggle today stem from necessary experimental underwriting of past years. The wording and provisions of some of these older contracts may actually invite certain abuses. This wording or provision of yesteryear was often chosen by the actuaries and underwriters without the

benefit of medical advice. Perhaps medical advice in those days was of uncertain quality. May we make it more helpful and more sought for today. Our job now is to assist our colleagues to avoid ambiguous, faulty and even dangerous clauses in the contract providing medical and hospital benefits. Likewise in claim administration, there is great need for medical opinion concerning the reasonableness of medical and hospital charges, the quality and necessity of treatment provided, the duration of necessary disability and, finally, and most important, the most reasonable and effective method of negotiating with the occasional physician who either deliberately or unwittingly makes an overcharge.

The actuaries, accustomed as they are to calculating their experience on the basis of claim rates, will find increasing value in the medical approach based on well-understood medical and epidemiological methods; in other words — what happens to whom, when, where, why; and how often? Claim rates will not often answer these questions. Vital statistics on morbidity rates may.

Sometimes, in the absence of medical guidance, our business colleagues inadvertently irritate the purveyors of the service for which the Company is to pay. For example, a contract which pays for the treatment of injury on the basis of the number of stitches inserted is bound to be irritating to the average physician. A claim administrator who assumes a belligerent or dictatorial attitude in challenging a doctor's fee is treading on dangerous ground. An Inspector, who clumsily or inadvertently raises doubts in the mind of the patient concerning the physician's competence, is not only irritating but will make the doctor "hopping mad." These and other lacks or inadvertencies tend to destroy the cooperative understanding of the practicing medical profession upon which we are so dependent. They will be minimized if the Medical Director's advice is sound, available and sought for.

The Medical Profession

In general and with a few notable exceptions, our relationships with the medical profession as a whole in this country are good. The great majority of physicians are honest, skillful and cooperative. To be sure there are glaring exceptions but they are relatively few in number. There are certain trouble spots in

this country which all of us identify, but these too have an interesting epidemiology. One physician who boasts in the scrub-room or the staff-room that he "got away with it" with the XYZ company, is like the spoiled apple in the barrel — others soon become spoiled. But this is a reversible reaction. One doctor talking informally in the scrub-room or the staff-room, expressing an honest concern for the success of the insurance principle and, therefore, his determination to be fair with the insurer and the insured, likewise exerts an influence on the others — this time in the right direction. It is the medical director's job to help bring about the latter situation in order to avoid the former.

It is important, I think, for us not to become totally immersed in the "bad" cases. Some of them may be so outrageous as to destroy our faith in mankind in general, and our fellow physicians in particular. We can't afford to let this happen, for then we are in no reasonable mood to deal fairly with the honest physicians who are in the great majority.

Again, generally speaking, physicians and hospital administrators are not well versed in insurance matters. They are rapidly becoming more so, for reasons which we shall examine in a moment. The attitude all too common a decade ago, "this is a big company and they can well afford to pay," is gradually disappearing. This is due largely to the successful efforts of the Health Insurance Council, the Health Insurance Association of America, and the influence of highly respected insurance company medical directors as well as the medical directors of insured industries.

Again, in general, the medical profession is just beginning to learn to separate medical ethics from medical economics. The two are rarely directly related. Professional ethics is another term for virtue, and virtue stands by itself. It cannot be compromised by economic or other mundane influences. Medical economics is receiving much more attention from physicians' organizations than it did 20 years ago.

One of the principal roots of the actuaries' dilemma is that patterns of medical practice are changing so rapidly that they cannot accurately price medical and hospital services now, much less in the future.

Here we are beset by the unique and peculiar system of pricing physicians' services. Traditional as it is, it sometimes leads the underwriters to distraction because it is so often unpredictable. Just when we think the medical profession may be moving toward stabilization of fees through relative value and other fee schedules, the various specialty groups assail us with demands for special consideration on fees, such as for anesthesiology, pathology, X-ray, cardiology and psychiatry. It is our job to explain to our business associates the reasons for and the values of these unanticipated demands, pointing out that they arise largely from specialization in medicine, resulting in higher quality of medical care.

What is needed for the good of all concerned is closer communication between the physician and his patient regarding fees, a principle long advocated by the American Medical Association. If, in addition to this, all physicians would heed the admonition of Dr. Gunnar Gundersen in his address before this Association last year,[3] many of our dilemmas would disappear. Dr. Gundersen said, "Now and in the future, doctors must especially guard against the abuses, say, of overprescription, overutilization and overcharging, simply because the patient happens to have insurance protection."

As hospitals come closer to a standardized accounting system, such as that promulgated by the Joint Commission on Accreditation of Hospitals, and as physicians move more rapidly in the direction of some kind of standardized fee schedules or control mechanisms, to replace the formerly honorable and ethical system of charging high fees to those with wealth or large incomes to make up for low or no remuneration from the poor, our actuaries will have much less difficulty. Indeed, with the continued rapid growth of voluntary health insurance, there is left but a relatively small residue of the very poor for whom the rich were formerly expected to pay. The doctor no longer needs to act as a one-man insurance company, spreading the cost of care over all his patients. Today the great majority of people are able to pay for their own care on the basis of the intrinsic value of the services rendered.

In our relations with the medical profession, one thing stands out. Physicians are almost universally and deeply concerned

with preserving the free enterprise system in the practice of medicine. The specter of government control is in the minds of all of us. Once doctors see, and they do see quickly when it is pointed out, that voluntary health insurance is a strong, and perhaps the last remaining bulwark between the free enterprise system of practicing medicine and government control, they are ready to help it succeed.

There are great forces in this country persistently and effectively pressing the nation toward government control of physicians and hospitals. I am not sure how much time is left to contain these forces. But I am optimistic enough to think that organized medicine in this country is moving in the right direction and that the insurance industry, including Blue Shield and Blue Cross, can find ways of moving with them to help preserve their precious freedom. By way of example, let me list some of the things already being done:

The Board of Trustees of the American Medical Association has constituted itself as a joint committee with the Health Insurance Council. The Committee consists of the Trustees, and the top officers of a dozen or so insurance companies. The Committee had its third meeting in Chicago on September 3, 1959. Acting as staff for the insurance companies in this Committee is the staff of the Health Insurance Council. Staff for the American Medical Association consists of the Committee on Insurance and Prepayment of the Council on Medical Service and its staff. This group provides a forum for discussing matters of mutual concern and an opportunity to formulate policy at top levels.

The Health Insurance Council has a Medical Relations Committee which has been in existence for some years and has been most helpful. The Health Insurance Association of America has a Committee on Medical Economics which has a Medical Directors Section composed of medical directors of several insurance companies which is proving helpful.

Many state and some county medical societies have formed insurance committees either independently or in conjunction with and at the instigation of the Health Insurance Council. We shall hear more about this later in the program. Many of these committees are proving helpful since they constitute a forum at

the grass roots level, in which problems common to insurance and medicine may be discussed and hopefully solved and in which both the insurance industry and the medical profession find an opportunity to police their own professions.

Only last month, the Subcommittee on Medical Education of the Medical Relations Committee, Health Insurance Council, prepared a "Discussion Leader's Guide" containing a lecture outline with charts for the use of any insurance company representative who has occasion to address interested groups, including medical students. It is hoped that a well chosen lecturer from nearby insurance company home offices may give a brief orientation to medical students in the health insurance field. A recent survey by Dr. Ennion S. Williams[4] showed that 52 medical directors of insurance companies are now, or have been, on medical school faculties. One company entertains the senior class at their home office for half a day each year, providing an open forum discussion of insurance problems, a luncheon or dinner, and an opportunity to exchange views and answer questions.

Dr. Williams' survey also showed that 93 per cent of 134 medical directors responding to a questionnaire are affiliated with their local medical society. Sixteen per cent serve on committees or hold office in their medical society. There was a time within my memory when the full time physicians in industry, including insurance, were not always welcome as members of the local medical society. That time has evidently passed. There never was a time when it was so important for insurance company medical directors and their staffs to participate actively in the work of their medical societies, local, state and national. Their voices must also be heard in the many other voluntary and professional organizations which are molding public opinion on medical care, notably the American Public Health Association.

Before leaving this discussion of our relationships with organized medicine, we should consider for a moment the tendency of some state and county, and in Canada, provincial, medical societies to demand minimum fees for insurance examinations. This is a troublesome trend for most of us. These societies rarely understand our legal limitations on acquisition costs, nor

do they realize that we usually request only limited information on the examination of an applicant. These problems are best prevented before they start. They will be prevented when the physicians of the insurance companies have established themselves as well respected members of their local medical societies and where their viewpoint may be considered when these discussions on fees first commence.

Hospital Administrators and Their Staffs

Here again, speaking in general terms, hospital administrators who are well trained and experienced have shown great interest in their insurance relations. Most, though not yet quite all, cooperate readily with the insured patient and his carrier. We must in turn cooperate with them. They appreciate our efforts to reduce paper work, especially claim forms, to a minimum in size and number of carbons. They appreciate our prompt payment of the hospital bill. They realize for the most part that the hospital bill paid by the insurance companies comes closer to meeting their true cost than does the bill paid by some community agencies.

In turn, however, the hospitals of the country face some serious problems. Most of them must resort to deficit financing. Most of them lose money on their emergency room, on patients who are supported by the local welfare department, and on the purchase and depreciation of increasingly expensive equipment. As a result of pleas for increased premium by some Blue Cross agencies, several state insurance commissioners have expressed sharp criticism of the hospitals in their area and one or two have ordered searching studies to be made. This is another form of government control, insidious at the outset and yet a control which should ideally be exercised voluntarily by the hospitals themselves acting in unison as community agencies. Still another danger is the insidious but inevitably increasing government control such as that proposed by the Forand Bill. Our respected colleagues in Canada have seen the result of the camel's nose under the tent in government financial support of hospitals. We shall profit from a discussion of this by the distinguished next speaker, Dr. Gossage.

It is not generally realized that in the last 15 years nearly

a score of universities have set up postgraduate schools of hospital administration. The influence of these schools is already apparent in a superior quality of hospital administration; the ablest hospital administrators, whether M. D.'s or not, are likely to be graduates of these schools. As a rule, these schools try to include discussions of insurance and medical economic matters, but I suspect most of them would welcome the offer of well-presented lectures, or panel discussions from some of us in the insurance business. Is there such a course in your local university? Is this an opportunity for you and your company? The Health Insurance Council can help you with material.

The Public

I have said that a large part of this problem is over-all public relations, that is, bringing to the general public a better understanding of the insurance principle, how it operates, what it provides, and what it requires. This is of the utmost importance if we are to relieve the pressure of public misunderstanding upon ourselves and upon our medical colleagues.

Many employers have done a remarkably effective job in explaining simply but thoroughly the exact provisions of their group insurance to their employees. More employers will do so if encouraged by their insurer. More insurers will, in time, provide simply worded, but comprehensive brochures for distribution to group certificate holders and to personal policyholders. Many of the larger group insurers will elaborate these pamphlets by illustrative slides which can be presented to employees' meetings. Many insurers will profit from making available a team of experts who can meet with group policyholders and employees to explain health insurance.

Finally, the doctors can do a great deal to explain the insurance principle to their patients if once we make it possible for them to understand the various types of coverage. Ordinarily, the physician should not be bothered with much time spent in this function, but oftentimes merely a few words from him will be more effective than a more lengthy explanation from the patient's employer or the insurance company.

The public continues to show increasing unrest on the mounting costs of medical and hospital care. To a large extent, increased

costs are inevitable, at least until hospital wages and hours are commensurate with similar work elsewhere. It is my belief that the services rendered by the modern physician with all the valuable facilities at the modern hospital are well worth the money. The public cannot expect to have the plagues of yesterday conquered without paying for it. They cannot expect to have their life span lengthened by 20 years since 1900 without realizing that it was not a miracle from heaven, but a laborious skillful, scientific operation which is costly. What price would one on his deathbed pay for one additional year of life if he could buy it? Unfortunately, we cannot make this kind of a bargain with the individual and yet we know the masses in this country have benefited immeasurably from the enormous and thrilling advances in medical science.

Says the A.M.A. News, quoting E. F. Hutton in the Houston, Texas, Chronicle, "We gripe about the rising costs of hospital care and doctor's bills. Because they hit us when we are down, they seem worse than other rising costs of living.

"But there is an unnoticed silver lining. We live longer, stay well longer and get sick less often than in days of yore. More sick people get well, and get well quicker than in the good old days.

"Modern medicine, surgery and drugs have added seven years to the average life span since 1940. They have reduced the average length of hospitalization by more than 16 days in the past 20 years, and made rapid cures possible in thousands of cases without going to a hospital. Some dividends!

"A shot of penicillin at home saves many an ambulance ride to the hospital. We pay for the shot and forget the saving. . . ."(5)

The time will come when all families will learn to budget for necessary and valuable routine health services, such as periodic health examinations, immunizations and the occasional doctor's visit. This time will be hastened when each individual who benefits from modern medical and hospital care understands that it has cost some money, that he is paying for part of it, and that his employer and insurance company may pay the rest. Then the demand for first dollar costs will be lessened and the

individual will take pride in having some control over his medical and health destiny.

Trade Associations

This is a time when it is of the utmost importance to develop good intercompany relations. We face the same problems. We can benefit much from the same solutions if we work together. Great progress has been made in this direction through the Health Insurance Council and the Health Insurance Association in just the last few years. It will be most helpful to these associations if they have the willing and generous assistance of the medical directors of their component companies.

Conclusions

1. The responsibilities of the insurance company's medical director and his staff are far different and even greater than ever before. These responsibilities extend to his company, the medical and hospital professions, the public and the trade associations.

2. In the present situation, the medical director is in a difficult but most important position. On the one hand, he must interpret the attitudes and reactions of professional groups to the insurance company so that a favorable climate will be developed. On the other hand, he must interpret the problems of the insurance industry to the medical profession so that they will have an understanding of the objectives we have in mind, as well as the part we each play in the over-all picture.

Of late, there has been strong, and often unwarranted criticism of the medical profession, not only by Union representatives but by Management as well. This is unfortunate because of the very important role they play in the success or failure of Health Insurance.

Therefore, the role of the medical director of an insurance company, or of one of its customers, is that of a stabilizing influence, doing what he can to see that all parties have a balanced and informed point of view.

3. The medical director can do much to encourage a greater respect for facts. No longer can we operate in this complex field of medical insurance, underwriting and administering plans

by a rule of thumb. As professional men, they can be a catalyst in encouraging all those involved to insist on reliable facts from which decisions can be made.

4. Specialization in medicine has undoubtedly increased the cost of medical care. But, at the same time, it has brought the public miracles of healing such as we have never had before. It is our responsibility to give the health insurance industry the tools to prove that reasonable increases in such costs are justified by the infinitely better services provided.

5. If we believe in the free enterprise system in the practice of medicine, as well as in business, now as never before, is the time for us to assume our proper role as medical counselors to our business colleagues, and as medical economics advisors to the medical profession.

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PRESIDENT KIRKLAND — Thank you very much, Bill. This conflict with the meeting of the American Public Health Association is most regrettable. I don't think anyone knows better than Bill how difficult it is to schedule meetings that do not conflict with something. There are 52 weeks in the year, and I don't know how many meetings. It wouldn't make any difference if we scheduled our meeting at any other time; it would conflict with something. However, I think we are taking a long look into the future and we will do what we can to avoid this about three years from now. But we do have to set up these things a long time in advance in order to get accommodations and so forth and so on, and it is just a difficult thing, which Bill well knows.

We will move right on to the Canadian scene. Dr. Charles Gossage, Associate Medical Director of the Confederation Life

Association of Toronto, is going to bring us up to date on that. Charlie graduated from Toronto in 1924, although he looks much older, but he is a Fellow of the Royal College of Surgeons of Edinburgh. He actually practiced in Toronto up to the time of joining the Confederation, up to 1950, and is still extremely active in Canadian medical circles and is also active in clinical medicine. I note here that he was with the Royal Canadian Army Medical Corps for six years, from 1939 to 1945. In spite of that, we won the war. Charlie, will you take over?

SYMPOSIUM ON OUR PUBLIC RELATIONS AND THE WORK AND AIMS OF THE HEALTH INSURANCE COUNCIL
GOVERNMENT PARTICIPATION IN HEALTH CARE
THE CANADIAN SITUATION — 1959

CHARLES D. GOSSAGE, M. D., F.R.C.S. EDIN.
Associate Medical Director

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You may wonder just how the subject of my paper fits into "A Symposium on Our Public Relations and the work and Aims of the Health Insurance Council." This also worried me but, after some correspondence with our President, my terms of reference were clarified and made very definite in a letter dated July 29, from which I quote:—

"Frankly, what we want you to help put across, with the material that you present, is the incontrovertible facts that in many areas Canada has gone further than the United States in the way of governmental control, and that we face what most of us consider to be a real danger of the same thing south of the border."

In fulfilling this assignment, I have tried to be *objective.* If I have succeeded in this, I think it is only fair to myself to state that I personally believe that private enterprise, properly exercised, will produce the best medicine for the greatest number of our citizens, at the least cost.

Having made clear my own position, I wish to place before you to the best of my ability — Government Participation in Health Care — The Canadian Situation — 1959.

The proximity of Canada to the United States, and the similarity of their socio-political structure, are such that the trend of events in one may well serve as the forecast of a similar development in the other. Because of this, I have been asked to review for you the salient features of Government participation in the Health Field in Canada.

As the United States is a Federation of States, so Canada is a Federation of ten Provinces and certain Northern Territories. Our population (17½ million) is about one-tenth that of the United States. Approximately one-third of the population lives in Ontario and one-quarter, most of whom are French-speaking, live in Quebec. The vast majority live within 300 miles of the

U. S. border, and there are great areas in the North which are only sparsely settled. The distribution of population creates problems in the provision of medical care.

The latest figures indicate that there are 20,000 doctors in Canada, of whom 15,000 are members of the Canadian Medical Association (C.M.A.) through membership in its Provincial Divisions. The Canadian Medical Association officially represents medicine at the Federal level and the Provincial Divisions at the Provincial level.

According to our Act of Federation (The British North America Act) health is a Provincial responsibility.

The Provincial Health Services have been developed gradually over the years, and vary considerably between Provinces. Basically, starting in the field of preventive medicine and the provision of medical care for the needy and indigent, they have progressively increased in number and diversity as follows:—

1. Laboratory Services.
2. The major portion of the cost of the Mental Hospitals and Sanatoria for Tuberculosis.
3. Workmen's Compensation.
4. Very soon after World War I, in certain depressed areas, Alberta initiated a Municipally financed Hospital Plan, and Saskatchewan financed Municipal Medical Care Plans.
5. In 1934, Newfoundland (not a Canadian Province until 1949) established a Cottage Hospital System, providing medical and hospital services for its isolated outports.

To this point these services arose as the result of a need not otherwise supplied. Such remained the situation until after World War II.

6. In 1946, Saskatchewan, in addition to the already existing Municipal doctor plan, developed a medical care program in one region embracing a population of some 50,000, known as the Swift Current Plan (Health Region No. 1). This is a compulsory Municipal Tax supported program, providing comprehensive medical care, including Public Health Clinics and Nursing, and even Dental care for children under 12. It currently operates on a fee-for-service basis at 70 per cent of the 1956 schedule.

7. In 1947, Saskatchewan, and in 1949, British Columbia and Alberta, our most Westerly Provinces, initiated Hospital Ward Care Plans.
8. About the same time, five Provinces (Ontario, B. C., Alberta, Saskatchewan and Nova Scotia) instituted indigent medical care programs for certain well-defined groups subject to a Means Test. The following groups are usually covered — the Blind, those on Mothers and Disabled Persons Allowances, and those on Relief and Old Age Security.
9. Two Provinces have recently developed Cancer Service Programs.

Thus, between 1945 and 1950, we saw three Provinces of Western Canada independently develop medical and/or hospital care plans beyond the accepted basic role of Public Health and the care of the needy and indigent.

The Federal Government, by consent of the Provinces, has always accepted responsibility and provided for the following obviously Federal Services:

Immigration
Sick Mariners
Medical Service of the Armed Forces
Veterans of the Armed Forces (the so-called Department of Veterans' Affairs or D.V.A.)
The Indian and Eskimo Health Service

Since 1919, all our National Political Parties have made repeated declarations[1] committing themselves to support "Health Insurance" in some form or other. It was not until 1943, however, that the Federal Government became directly involved. At this time, it drafted legislation to provide Health Insurance on a nation-wide basis. This was not proceeded with. In 1948, the Federal Government announced a series of Health Grants available to the Provinces as "a first stage in the development of a comprehensive insurance plan for all of Canada." These included grants for hospital construction and rehabilitation, etc. This has had a considerable influence over Provincial Health policy.

In 1955, at a Dominion Provincial Conference, Ontario proposed a full Hospital Insurance Plan. No decision was reached,

but the Federal Government stated it would assist in such a plan, when a majority of the people of Canada were ready to proceed with Hospital Insurance. At a subsequent Conference in January 1956, Ontario put forward a proposal for Hospital Insurance, including the provision for Diagnostic Services. As a direct result of this Conference, the Federal Government introduced in March 1957, Bill 320(2)—"An Act to authorize contributions by Canada in respect of programs administered by the Provinces, providing Hospital Insurance and Laboratory and other Services in aid of diagnosis," also known by its short title as "The Hospital Insurance and Diagnostic Services Act." The debate on the Bill was interesting in that it was not related to the wisdom of the policy, but to the inadequacy of the benefits proposed. The Bill was approved without one dissenting vote.

By this Act, the Federal Government offered to contribute approximately 50 per cent of the cost of implementing Provincial Hospital Insurance Programs, providing that at least six of the Provinces, containing not less than one half of the population, would implement such a plan. This provision was deleted in June 1958.

The Act *excluded* Tuberculosis Hospitals or Sanatoria, Hospitals or Institutions for the Mentally Ill, Nursing Homes, Homes for the Aged, Infirmaries or other institutions providing custodial care. It *included* the following *In-Patient* Hospital services in *General* Hospitals:—

1. Accommodation and meals at the standard Public Ward level.
2. Necessary nursing services.
3. Laboratory, radiological and other diagnostic procedures, together with the necessary interpretation (for the purpose of maintaining health, preventing disease and assisting in the diagnosis and treatment of any injury, illness or disability).
4. Drugs, biologicals and related preparations.
5. Use of Operating Room, Case Room and anesthetic facilities.
6. Routine surgical supplies.
7. Use of radiotherapy facilities.
8. Use of physiotherapy facilities.
9. Services rendered by persons who receive remuneration from the hospital.

Provision is also made in the Act, on an optional basis, for the inclusion of Out-Patient Department diagnostic services. No waiting period, no limitation of length of stay in hospital, nor exclusion due to age or pre-existing disease is imposed.

The Provincial Governments quickly took advantage of this legislation. With effect July 1, 1958, five Provinces initiated their programs, and to date eight out of ten have followed suit. One Province (Prince Edward Island) has signified its intention of so doing, and only one (Quebec) remains outside the plan. Currently about three-quarters of our population are covered by the program. Only a few of the Provinces supply Out-Patient services within the plan, but there is every evidence that this may increase. One Province, Ontario, additionally provides, at its own expense, similar care in Mental Hospitals and Sanatoria for Tuberculosis. It is interesting and, perhaps, prophetic to note that to implement their plan in Ontario, the Government took over the staff of the Blue Cross.

So preoccupied was the Profession with the Hospital Plan, and the beginning intrusion of Government into the Medical Care field through the provision of Diagnostic Services in the plan, that an event of more ominous significance passed almost unnoticed by the rank and file of the Profession. In late 1957, there was a further encroachment into the Medical Care field by the Government in the Province of Newfoundland. Suddenly, without warning, a plan for a Children's Health Service was announced, under which free in-hospital medical services were provided for all children up to age 16. No prior consultation or discussion took place with the Profession, and it was only after much negotiation that it was possible to insure that provision was made for free choice of doctor and patient, and the payment for such services on a fee-for-service basis, at 80 per cent of the 1956 Schedule of Fees.

The foregoing indicates the progressive development of Governmental Health Services in Canada to date. It is only fair to say that the public, and certainly a busy medical practitioner, may easily have been unaware of the institution of many of these services and, therefore, the trend. However, the Hospitals and Hospital Associations, the Insurance Industry and Official

Medicine (the C.M.A.) were undoubtedly aware of the march of events and their significance. The passage and implementation of the Hospital Insurance and Diagnostic Services Act produced a widespread reaction, brought into focus the whole trend, and made those most concerned in the provision of medical care reassess just where the trend might take them.

To attempt to give briefly the reaction of the various groups is to court criticism — to omit it in the discussion is to leave it incomplete. I would, therefore, request that you accept the following assessment of the reactions as being my personal opinion, based on my own observations and considerable consultation with those in the best position to know.

Reaction of the Public and Press

Apart from a very few Briefs presented by Chambers of Commerce and the writings of a few private enterprise crusaders, which protested the intrusion by Government into this field and warned of spiraling costs, the public and the press, in general, welcomed the legislation and introduction of the Provincial Hospital plans as a major step forward in the field of Public Welfare.

Reaction of the Hospitals and Hospital Associations

Initially, this group was very apprehensive. The hospitals were concerned about having to submit their budgets to the scrutiny of Government and disapproved of not being allowed to charge depreciation into their costs. However, the Government Officials have been very cooperative; the changeover was made with a minimum of dislocation; more careful budgeting has long been needed in their administration, and financially, they have never been better off, because they now receive the full cost of their care of indigents. It is true that hospital costs have gone up because of increased admission rate and increased length of hospital stay, with greater use of laboratory procedures and drugs, but, nevertheless, this was expected and has not been alarming. Paper work at the hospital level has not materially increased. Hospitals remain under the control of their own Boards and I think it is fair to say that these institutions and organizations approve in principle the program and are now content with it.

Reaction of the Insurance Industry

From the early 40's, both at the Provincial and Federal level,

the Canadian Life Insurance Officers Association has been submitting Briefs and appearing before Government Commissions dealing with Health Care Plans. These Briefs have urged the provision of Health Insurance through private enterprise rather than Government channels. They received courteous hearings but it is not apparent that they had much success in influencing the policy. After the passing of "The Hospital Insurance and Diagnostic Service Act of 1957" they, with the Canadian Chamber of Commerce, were joint sponsors of "Underwriting Canadian Health, An Economic View of Welfare Programs,"[3] known better by its short title "The Lougheed Report 1957." This is a study done by a consulting firm of Economists on the Government Hospital Insurance Plan. The report predicted financial disaster and economic collapse due to the Welfare drain on the economy. It received considerable publicity and widespread circulation to Members of Parliament and other key people, but it was not favorably received, being considered a prejudiced view.

The Insurance Industry, to say the least, is most unhappy at having its Hospital Ward Care Insurance pre-empted by the Government, and is alarmed at the trend towards the Welfare State.

A factor in the inability of the Canadian Life Insurance Officers Association to modify Government action was that there was no joint action with the Casualty Companies.

To remedy this situation, in June of this year the Canadian Health Insurance Association was formed. This is an Association of all Life and Casualty Companies doing business in the Accident and Health field in Canada and is a counterpart of the Health Insurance Association of America. In future, all Accident and Health problems will be dealt with by them, and they will be able to present a united front in such matters. As a further development stemming from this, the wisdom of forming a Canadian health insurance council is being considered. This council would differ in organization from the Health Insurance Council of the United States, which is basically an Association of Insurance Associations, in that it is proposed that it should be an Association of all Associations which represent not only those who indemnify for, but also those who provide health care. It

is interesting and encouraging to note that the Canadian Medical Association is taking active leadership in this development. We may be confident, I believe, that more united and effective action will be forthcoming in the immediate future.

Reaction of the Medical Profession

Individually and officially, the Profession has always been in favor of free enterprise on a fee-for-service basis, which, it believes, will provide the best medicine at the least cost. The Profession, however, is not always consistent in the principle of fee-for-service. A preliminary review of the current official Government "Survey of Physicians,"[4] reported in a private communication dated September 1959 (76 per cent of the questionnaires completed and returned to date), indicates that 29 per cent of the physicians in Canada derive their income solely or mainly from salaries. This varies depending upon the Province, from 21 per cent in Nova Scotia to 51 per cent in Newfoundland.

Although the Profession never approved of the introduction of the Third Party in medical care, it recognizes the right of the group and the individual to prepay for their medical care. In this field, prior to 1957, Canada was similar to the United States, having Blue Cross Hospitalization, physician sponsored service plans similar to Blue Shield, and the usual commercial carrier group and individual insurance. These plans had proportionately approximately the same number of the population covered as you had in the United States.

In addition to these general reactions, the Canadian Medical Association since 1934, in official statements of policy relative to the health of our population, has indicated its willingness to cooperate in making available to every citizen adequate medical facilities, whether they could afford it or not.

I quote in part from "A Statement of Policy" adopted by the C.M.A. in 1949[5]:

"Para. 6. The Canadian Medical Association having approved the adoption of the principle of health insurance and having seen demonstrated the practical application of this principle in the establishment of voluntary prepaid Medical Care Plans, now proposes:

(a) The establishment and/or extension of these plans to cover Canada

(b) The right of every Canadian citizen to insure under these plans

(c) The provision by the State of the health insurance premium in whole or in part for those persons who are judged to be unable to provide the premiums for themselves."

"Para. 7. Additional services should come into existence by stages, the first and most urgent stage being the meeting of the costs of hospitalization for every citizen of Canada. The basic part of the cost should be met by individual contribution, the responsible Governmental body bearing in whole or in part the cost of those persons who are unable to provide the contribution for themselves."

This policy was reiterated in a revised "Statement on Health Insurance" dated 1955[6], which, in addition, went on to say in part:

"In the event of Government participation in the universal extension of Health Insurance to all citizens, the introduction of health insurance legislation should be preceded by adequate consultation with the organized medical profession and other groups affected."

The officials of the C.M.A. were consulted by Government in reference to the Hospital Plan, but the adequacy of the consultation and its effect may well be questioned. In the light of its stated policy, the C.M.A.'s only grounds for protest, when the Hospital Care Plan was introduced, was that it was under compulsory Government auspices, instead of voluntary private enterprise facilities, with the Government paying the premium of those unable to pay for themselves. However, no protest was made on this basis.

One feature of the program, that is the inclusion of Diagnostic Services, did cause a considerable protest, especially by those of the Profession (Radiologists, Pathologists, etc.) involved in providing such services. The Profession took the view that Diagnostic Services, as provided by a doctor, are medical services and should not be classed as hospital services and, if included in

the plan, should be paid for on a fee-for-service basis. The Profession views their inclusion as an extension of Government into the Medical Care field on a compulsory basis. Representation was made, but failed, the Government stating that it was concerned only in the total cost and was not interested whether hospitals paid their physicians by salary or on a fee-for-service basis. Diagnostic Services remain within the Hospital Care Plan.

While there have, of course, been letters to the Press and protests at medical meetings by a very vocal minority, who see in the plan the first step on the road to State Medicine, and who urge all-out resistance to Government invasion of the Medical Care field, nevertheless, after a year of operation, I think it is fair to say that officially the C.M.A. is content with the Government Hospitalization Insurance Program, and in this is supported by the majority of the Profession. The Profession is acutely aware that further Government intervention probably will occur when it becomes politically expedient, unless the present trend of "Welfare Thinking" by unions, the public and the vote-conscious politician is reversed. They are most anxious to prevent this, and various Committees are devoting much time to the problem, but as yet they have come up with no acceptable strategy. Pending such a strategy, official medicine no doubt is anxious to avoid a stand that will exclude it from the councils of Government, realizing that, in a Democracy, medical care must be implemented and facilitated by the Profession under whatever system is evolved by legislation.

SUMMARY

Such, then, is my appreciation of the extent of Government participation in Health Care in Canada today, and the reaction of those most affected. Having tried to approach the subject unemotionally and objectively, I have been unable to avoid the conclusion that, with the exception of the Insurance Industry, the vast majority of the public, including Hospital Administrators and the Medical Profession, are content with the Government Hospital Insurance and Diagnostic Services program. While it is probable that some of my Canadian colleagues may not agree with my assessment of the reactions to the Hospitalization pro-

gram, I think they all agree that the Insurance Industry and the Medical Profession are alarmed at the trend towards increasing Government intervention in the Medical Care field, but as yet have no adequate strategy to resist it.

In conclusion, may I pose some questions and make two observations?

Is the extent of Government participation in Medical Care in Canada reasonable, and in the best interests of its citizens?

Will the same pattern occur in the United States?

What can we do to hasten the availability under Free Enterprise of the best medical care to every citizen of our country at a reasonable cost, so that Government will not deem it politically wise or necessary to extend further its compulsory medical care plans?

Are our representative associations in the Medical Care field capable, under their present terms of reference, of producing effectual, unified and binding action soon enough, or would it be possible to give them temporary extraordinary emergency powers to act on our behalf in the solution of this problem, without transgressing Antitrust laws?

These are indeed challenging questions for both countries. Time is running out. We must act quickly.

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PRESIDENT KIRKLAND — Thank you, Charlie. Think that over a little bit, gentlemen.

I don't think it unreasonable to say that this is the most important part of this entire program. I knew I would run out of gas, and I have run out of gas, so you can read the title of this thing, which is longer than I can read, in your program. All I am going to do is to introduce to you, it says here, Albert V. Whitehall. To me, he is "Bert." He is Director of Health Insurance of the Life Insurance Association of America, and Vice-Chairman of the Health Insurance Council. He is taking over from here on.

PANEL DISCUSSION

Activities of the Health Insurance Council; Their Impact to Date; Legislative Implications; An Assessment of the Future

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MODERATOR WHITEHALL — In asking me to moderate this part of the session, your President asked that I lay a little groundwork, briefly, about the Health Insurance Council, what it is, as a framework in which our three speakers, who are Chairmen of standing Committees of the Council, might later make their presentations.

As you know, the Health Council is a federation of several associations in the insurance business. The Association of Life Insurance Medical Directors is one of those constituent members, so this is in the nature of a report from the Health Insurance Council to you as one of its members.

I shall not burden you with a long history of the Health Insurance Council. As you know, it was started back about 1946 or 1947, to develop a bridge of understanding between the insurance business and the providers of care, the doctors and hospitals.

Its purpose, I think, is best summed up in one statement, which is my own but which I deeply believe: that health insurance as a mechanism for financing health care costs is absolutely vulnerable to the attitudes and practices of those who provide care — doctors and hospitals. Let me repeat that for emphasis. Health Insurance as a mechanism for financing health care costs is absolutely vulnerable to the attitudes and practices of those who provide the health care services.

What is more, the mechanism of health insurance is at the mercy of the attitudes of the public as regards insurance, as regards the practice of medicine, and as regards the function of hospitalization. You have just heard from our Canadian neighbor the result of attitudes that were allowed to develop on the northern side of our common border.

That makes the Health Insurance Council function rather important, because we are striving to influence attitudes and practices of the providers of care, but also we have our own problems, our own attitudes and our own practices, to look at, too. Our purpose is to develop a voluntary system, a partnership between the insurance business and the providers of care, which will serve the American people to their satisfaction; because, if we don't, if we don't serve them and if we fail to persuade them that we are serving them well, we will be voted out of office and the business of health insurance will certainly be taken over by someone else who is able to promise more, perhaps, if not to deliver as much.

One of our early problems, of course, was to get hospitals to accept insurance coverage as an assurance that the hospital bill would be paid. Otherwise, the patient would have to pay a deposit on admission. Of course, we fought an uphill battle on that against the Blue Cross programs, which had developed their concept before the companies got into the business. The hospitals knew Blue Cross; knew the system. They did not know us. To establish that relationship has taken a great deal of work. It has been successfully accomplished, I believe, and you are going to hear from one of our speakers this morning about that program and other problems affecting hospital relations.

In medical relations, we face the problems of fees and forms.

We have urged that doctors remember that insurance does not increase ability to pay; that doctors should charge their normal fees to insured patients. We are finding, somewhat to our dismay, that doctors do not have a rigid pattern of fees upon which the insurance business may predicate its future premiums. We have a real problem on this matter of fee, and it is not the problem of gross overcharges. It is very much like the man who went into the barber shop and the barber commented, "I see you've got a case of sniffles." He asked, "Have you got a cold?" The customer said, "Yes, and I don't know how to shake it." The barber said, "Well, it's too bad you ain't got pneumonia; they can cure that."

We can cope with the gross overcharges. The snake bites don't bother us, but the flea bites do, and we find that the medical profession is facing up to this problem of the changing economics of medical practice.

The Code of Ethics of the American Medical Association suggests that the doctor's fee should be commensurate with the value of the services rendered and the ability of the patient to pay. As you heard from Dr. Shepard, our population has changed in the last generation. We don't have as many poor people, we don't have as many very rich people and we don't have that great spread of wealth. Most of our population has moved into the middle class, and it is a very prosperous middle class, on the whole; so that most of the doctor's patients today are able and expect to pay a normal fee. The patient who expects to pay an excessive fee because of his excessive wealth is the rare exception, and frequently an indignant exception.

So, recognizing that factor and recognizing that health insurance has also made it possible for people to pay a normal fee, the doctors are now searching for some base by which they can determine the intrinsic value of the service. We see the American Medical Association recommending to its constituent state associations that they conduct relative value studies and develop relative value indices which may be a guide to doctors, to the public, and to the insurers, as to what the normal fee might be.

This development is occurring right under our noses and is so close to us that we sometimes see trees instead of forests. You

are going to hear from one of our speakers about the approaches that the Medical Relations Committee is taking toward this and other problems in medical relations.

But, before you talk to doctors, before you can even approach doctors, you have to cope with some of the irritations that they have about us. One of the most potent of those irritations is the matter of a multiplicity of forms. We are so close to what we believe may be a solution to that problem that I believe you will be interested in our last speaker.

Now, our program will run this way: We will have the three speakers introduced and they will present their papers. We solicit questions from you, to be written on a piece of paper, if you have one, or a couple of my associates will pass up and down the aisles and, as you see them, if you will just raise your hand, they will pass down a card for you to write on. Will you please, as the speaker is speaking, write your question, and write it with a view to having some discussion on that point, something that you feel will bring out some additional information, or answer a question that you have. My associates will bring them up here, and we will have those questions discussed by our Panel during the period thereafter.

Our first speaker this morning — and I have their permission to pass over the long history, but I must say a few things about this first man. When I first came into this business, I was at a loss to know what the Health Insurance Council was and what its function might be. Then, I ran into the term, "claim cost control." One of the finest documents that is available on that is a report of a subcommittee on claim cost control, reporting to a task force of the health insurance business in 1955. I saw the name of this man as Chairman of that Committee, and made up my mind that sometime I would have to meet him. I did not meet him, however, until after he had been invited to appear and had appeared on a program of the American Hospital Association, in which some fifteen hundred or two thousand hospital people sat and listened to him, along with some other people. When that program was over, it was found that this gentleman had completely captivated the audience. Now, whether it was because of this achievement or other qualifications that he had that he was made Chairman of the Hospital Relations Committee of the

Council, I don't know.

In any event, I give you now the present Chairman of the Hospital Relations Committee of the Health Insurance Council, and I promise you that he will captivate you as well as he did the hospital folks. Mr. Raymond F. Killion, Second Vice-President of the Metropolitan Life Insurance Company!

RAYMOND F. KILLION
Chairman

Hospital Relations Committee

As Chairman of the Hospital Relations Committee of the Health Insurance Council, I welcome this opportunity to visit with the Association of Life Insurance Medical Directors of America.

The hospital relations activities of the Health Insurance Council have been carried on for over 10 years. Much has been accomplished and much remains to be accomplished. In carrying on this work, a basic objective of the Health Insurance Council has been to create an atmosphere of understanding and cooperation with the hospitals of the country to the end that private voluntary Health Insurance will accomplish its goal of making available to our insureds the best of medical care at a cost in keeping with their ability to pay. It may be stated with confidence that, at the present time, the relations between the insurance industry and the hospitals have reached a high degree of mutual understanding and cooperation. However, to maintain the progress already made, and to advance in other areas, continued attention to this important problem will be necessary.

As a professional group within the insurance industry, you are most strategically situated to make a major contribution to the continued and increasing effectiveness of our hospital relations activities. As one area for your consideration, hospital expense insurance, to maintain continued acceptance, must have the flexibility to permit changes indicated by changing concepts of hospital care. For example, we laymen see frequent reference to such developments in hospital care as intensive care units, progressive patient care, home care programs and convalescent facilities in conjunction with the general hospital. To properly appraise

these developments and their effect on the future development of hospital expense insurance, knowledge and understanding will be required on the part of insurance company executives. The medical director is the person so well fitted to bring that knowledge to his associate officers. As another area for your attention, it may be noted that the insurance industry has hundreds of representatives making daily visits to hospitals. These people should understand the common-place problems in the daily operation of a hospital. After all they are the ambassadors of the insurance industry. The cumulative impression of their daily visits is going to have a marked effect on the attitude of hospital representatives toward the insurance industry as a whole. Here too the medical director is in position to make certain that these company representatives have the understanding and knowledge necessary to accomplish their purpose in a manner that will earn the cooperation and acceptance of the hospitals. One simple example might be to give these men your professional business card as an introduction to the hospital administrator.

While recognizing that it is of great importance for our representatives to have a sympathetic understanding of the problems of the hospitals, by the same token it is necessary for the hospital representatives to have an understanding and appreciation of the problems of the insurance industry which makes such a major contribution to hospital financing. The insurance story must be told to hospital representatives at all levels — to the trustees, the administrators, the accountants, the admissions clerks, and in particular to the representatives of the hospital associations at various levels who are in position to reflect their knowledge in communication with their member hospitals. There is every indication that these people are keenly interested. Furthermore, they need this story to work informatively with the patient whose concern is paramount. From the practical standpoint it may be noted that of 123 million people having some form of hospital insurance, 72 million have coverage provided by insurance companies, either group or individual, and insurance company claim payments under hospital insurance in 1958 amounted to one billion, one hundred and eighty-six million dollars. As a source of income we are important to the hospitals. Here again the medical director may well be in position to carry this important story to these groups and to

offer advice and counsel to others in his company who may be undertaking this activity.

This morning I will give you a brief outline of the activities of the Hospital Relations Committee of the Health Insurance Council indicating the problem areas as we see them and the measure of success to date.

By way of background, and because of its effect on our overall problem of hospital relations, one should have an understanding of the intimate relationship between the Blue Cross plans and the hospitals in their area. The Blue Cross Commission is an integral part of the American Hospital Association which takes justifiable pride in the development of the Blue Cross concept. In the local areas, representatives of the individual hospitals also played a major part in this development and in many areas the local hospital Administrator may also be an active participant in the management of the local Blue Cross plan. Blue Cross was a going concern before most insurance companies actively entered the field of hospital expense insurance. It is no wonder then that some administrators have looked upon Blue Cross as the one and only method for prepayment of hospital expense and upon coverage offered by insurance companies as a development to be discouraged. There is no question that Blue Cross has made a major contribution to the existence of private voluntary health insurance. However, there were some things which Blue Cross could not do or which could be done more effectively by insurance companies. For example, the large employer, with branches spread country-wide, found it more satisfactory to work out a uniform plan for his employees through a single insurance carrier, rather than to undertake the enormous task of negotiating with dozens of local Blue Cross plans. In a great number of cases, the hospital insurance is only a part of a broad package plan including life insurance, pensions, and disability benefits which can be more economically administered by a single carrier. Also, through its existing mechanism for underwriting individual applicants, the insurance industry was prepared to attack the problem of making coverage available to individuals who were not eligible for group insurance through an employer. This was an area not usually undertaken by the Blue Cross plans. In the early days of

our hospital relations activities, it was most difficult for insurance company representatives to meet with hospital people because of this close affiliation with Blue Cross. However, as the volume of our business increased, hospital representatives, particularly at the local level, became much more receptive with a very justifiable self-interest and concern for their insured patients. Nevertheless, this relationship between the Blue Cross and the hospitals still continues as an important influence affecting our hospital relations program. We recognize and applaud the accomplishments of Blue Cross. We are sympathetic to their problems with which we have much in common. At the same time, we feel strongly that spokesmen for the hospitals should give fair recognition to the accomplishments of insurance companies in the field of hospital insurance.

The earliest major activity of our Committee, starting in 1948, was in the area of hospital admission of persons insured under insurance company plans. This problem has two facets — first, to permit the insured to use his coverage to establish credit on admission, thereby avoiding the possible requirement by the hospital of a substantial down payment and second, having been admitted, to establish a mechanism whereby the benefits payable under the plans would be paid to the hospital. While the early efforts met with some resistance, today we find that the hospitals are cooperating fully to make these plans work. Group insurance received the first attention for the reason that many more persons were affected than in the case of individual insurance and the nature of the coverage lent itself more readily to the mechanism. For group insurance two plans were devised — (1) The certification of benefits system which is used extensively throughout the United States and (2) The card index system, the forerunner, which is still in use in certain metropolitan areas. These systems are described fully in articles by Mr. Orsini, Vice-Chairman of the Health Insurance Council. Mr. McBurney will make reference to the claim form which is an integral part of the certification of benefits system. These two systems for group insurance have almost fully resolved the problem of hospital admission for group insured employees. However, the continued success of these systems will require continuing attention and cooperation by insurance companies. In discussion

with hospital representatives, they point to two important areas where the systems may fall down if not carefully adhered to. It is apparent that in some areas there is a lack of company cooperation in the use of prescribed forms. There are some employers who have shown a reluctance to use the prescribed form in connection with their group insured hospital expense insurance. In some areas the hospitals have pointed to delay in the payment of claims which to them is an all important burden. Continuing attention to these problems by insurance companies is absolutely essential for the continued fine working relationship with the hospitals. For individual insurance, efforts have been made over several years to establish a corresponding admissions plan which would be acceptable both to the hospitals and to the insurance companies. Here it must be acknowledged that we have not been entirely successful. There has been a minimum of interest on the part of the insurance companies, some maintaining that their volume is not sufficient, others finding fault with the various plans which had been advanced, in particular, any plan which would require them to certify benefits on the basis of an admitting diagnosis. The hospitals, on the other hand, feel very strongly that if persons insured under individual and family policies are to receive the same consideration on admission as persons insured under other types of coverage, some plan must be devised. In recent months, we have been circularizing the companies with a new proposal and we hope for greater company participation. Any weight which you as medical directors can put behind these efforts will be most helpful.

Communications with hospital personnel as an information program has come in for a major share of the activity of our Committee. The Health Insurance Council has arranged for exhibits to be shown at the Regional Hospital Association meetings. This has provided an opportunity for insurance industry representatives to be present at the meeting for personal discussion with hospital representatives on problems of mutual interest as well as for the distribution of literature of informational nature. Members of the staff of the insurance company associations making up the Health Insurance Council have taken active part in many meetings of hospital organizations. The bulletin service, information for hospitals, has been extremely

well received. This is a release designed for direct mailing to over four thousand hospital administrators as well as to the officers of the various state and city hospital associations. The subject matter covers such areas as the extent of insurance company activity in the hospital expense field, descriptions of the various insurance company plans such as comprehensive and major medical, the benefit identification system, the major distinctions between group and individual coverage, and similar articles designed to be a source of information about insurance company activities for the benefit of hospital personnel. As an integral part of the release there is a section "write for" in which is listed current articles of interest. The response to the "write for" section has been a positive indication of the interest shown in these releases. In addition to the informational activities already under way, there is on the drawing board a proposal for a lecture series outline to be offered to schools of hospital administration. The possibilities here are tremendous. We also have on the drawing board a pamphlet series currently being studied by the Health Insurance Institute, the object of which would be to provide to hospitals, as a service, pamphlets which could be made available to their patients and others to give them a better understanding of hospital operations as well as provide information with respect to the various types of insurance coverage.

National Hospital Week offers a particularly appropriate occasion for the insurance industry to show tangible appreciation of the outstanding accomplishments of our hospitals in the care of the sick and injured. Our Committee in cooperation with the Health Insurance Institute has actively encouraged participation by the individual companies in giving this well deserved recognition through their advertising, house organs, releases to sales force, and other media. Each year the companies are provided with a kit which includes articles, editorials, and other factual information about hospitals suitable for company publications as well as suggested advertisements and radio and television announcements. During National Hospital Week in 1959, 66 companies participated in the program through advertising, home office publications, poster distribution to local hospitals and personal contact. One large company (Dr. Shepard wouldn't

let me tell you its name) used the occasion of National Hospital Week in its national magazine advertising. This advertisement was particularly well received by hospital people and reprints were distributed by many hospitals to their patients and other community groups. The companies have already been sent an announcement of National Hospital Week for 1960 and this will be followed up with material designed to aid in company participation in this important event. This is an activity where the aid of the medical director can be particularly helpful and I hope that all of you will get behind this program to demonstrate to the hospitals that as an industry we stand behind them in their humanitarian efforts.

Our relations with the hospital associations are showing continuing advancement. Through the State Committee Program our industry is reaching more and more of the hospital associations at the state and community level. A particularly fine example was an institute on insurance principles and procedures sponsored jointly by the Council on Administrative Practice of the New Jersey Hospital Association and the New Jersey Committee of the Health Insurance Council. At the national level we have established a most promising relationship with the American Hospital Association. During April and May of this year, the American Hospital Association and the United States Public Health Service conducted a series of four regional conferences on the subject of developing principles for planning future hospital systems. For the first time the Health Insurance Council was invited to have representatives participate in discussions of this type. We were very grateful for this opportunity to learn something of the real problems in the hospital field. Also, the Chairman of the Health Insurance Council was invited to attend the Annual Luncheon at the American Hospital Association meeting in New York. Again we were grateful for this recognition. Our Committee has had meetings periodically, and we trust they will continue to be held, with a corresponding group representing the committee on prepayment, reimbursement and Blue Cross of the American Hospital Association. All of these indications point to a favorable climate in which we can jointly present the problems common to the insurance industry and the hospital associations.

As I think you will agree, much has been accomplished in our Hospital Relations Program. On the other hand, much remains to be done. In the all important area of claims control, it is to be hoped that we can work with the hospitals to encourage practices under which we will be able to provide hospital insurance at a price commensurate with needed hospital services. In this area we are particularly conscious that the existence of insurance should not dictate hospital practice. Hospital practice must of necessity be determined by those people responsible for the care of the sick and injured. There are several important areas in the hospital field which we are not reaching, for example, the very large number of proprietary hospitals. A particularly vexatious problem arises through the hospital practice of granting discounts below cost for hospitalization provided to Blue Cross Certificate holders. For example, in a recent news release in New Jersey it was announced that the hospitals have agreed to accept less than their costs as an assistance to the Blue Cross Plan. In commenting on this development, a spokesman is reported as having stated that as a result Non-Blue Cross users of the hospital service will be required to pay more than their share of the cost of the deficiency made up through charitable donations. We recognize the intimate relationship between Blue Cross and the hospitals and we have a sympathetic understanding of the Blue Cross problem with respect to rates, as many of these problems we have in common. Yet, it is perfectly obvious that the practice of discounts below cost by hospitals for Blue Cross Certificate holders can only result in serious repercussions in the community. This is a problem about which you people should be particularly thoughtful. On the other side of the coin, there are future problems to be met within our own industry. As you know, the Health Insurance Council does not represent all of the companies in the health insurance field and an effort must be made to extend our principles and practices to these companies. Within our own membership, we must be particularly mindful of problems created for the hospitals by any practice such as the sale of inadequate coverage.

MODERATOR WHITEHALL — During the course of that excellent presentation on the Hospital Relations Committee, and its very outstanding accomplishments, about which Mr. Killion was much

too modest, and its problems, he made mention of Mr. Orsini, who does the staff work for the Hospital Relations Committee. I see that Lou is in the audience, and I think you should know who he is. I will have him stand up. Lou, will you stand up, please? He is Assistant Director of Research and Information of the Health Insurance Association of America, and a Vice-Chairman of the Council.

About our next speaker, anything I could tell you would be superfluous and unnecessary. If there is any man I can think of who needs no introduction to this audience, it is this man. In the time that it has been my privilege to be associated with you and with him, it has been my observation that nobody in the group enjoys greater respect and affection. For the last year and a half, he has been Chairman of the Medical Relations Committee. He is the Medical Director of the Aetna Life Insurance Company, Dr. Grant Irving.

J. Grant Irving, M. D.
Chairman

Medical Relations Committee

In the field of medical relations and health insurance, the medical director occupies a unique position in his dual capacity as physician and insurance executive. It seems to me that within this Medical Directors' Association we have a large virtually untapped source of energy that can be devoted to the improvement of the relations between the medical profession and the insurance industry. The medical director should consider that his task is divided into three categories: (1) self-education, (2) education of the lay members of his own insurance company, and (3) education of the medical profession in his community.

First, he must be firmly convinced of the vital importance to him and his company of the expanding voluntary insurance in this country. He must believe in the need for growth, both as to numbers insured and benefits provided, if we are to retain independence and ensure the continuance of our system of free enterprise. Having reached this conviction, he should then turn with vigor to his self-education in regard to the Health Insurance

Council's aims and projects. Much of this he can obtain from the excellent articles which have appeared in the Transactions of the Medical Section, American Life Convention, and of the Association of Life Insurance Medical Directors in the past three years. I hope every medical director in this room maintains a Health Insurance Council file in or near his desk. This should be used for the literature which is sent directly to him by the Health Insurance Council. Also, he and his secretary should combine to maintain a clipping file from medical journals and the local press. High on the priority list should be the American Medical Association *News*, the legislative section of the *Journal of the American Medical Association*, and his own state journal. *Medical Economics* is also an excellent source material. Particularly in the next year or two, priority should be given to articles on medical economics and references to legislation carrying the threat of government regulation. For up-to-the-minute reference, and as the core of this file, I would recommend the material now in preparation by the Subcommittee on Medical Education of the Health Insurance Council. This will be in two sections, one entitled "Notes on Health Insurance: Reference Material for Medical School Lecturers;" the other, "Health Insurance: Discussion Leaders' Guide." This is *not*, however, the limit of self-education. Active participation in health insurance programs should be with the attitude of learning as much as we tell to doctors and hospitals. Sometimes we learn more from experience than books!

Now we come to *the second category* — the medical director's educational program within his own company. Here he must be ready to frequently explain to laymen something of the background of the physician and why he sometimes acts toward insurance people the way he does. He can be of great help in guiding lay people in his company whose work brings them in contact with doctors.

This explanation should touch on some of the following points. There is a vast common ground between the physician and the insurance industry, since every life or accident contract involves questions of health. Health is a physician's business and the evidence which he supplies to the company will always have a

bearing on insurability. In our daily transactions with many of the 169,000 physicians in the United States and Canada, it is imperative that the insurance industry deserve and maintain their goodwill. Recent assaults on the free enterprise system, as, for example, the Forand Bill, have tended to draw the two organizations together in the face of a common enemy. As we have previously mentioned, there is mutual agreement by the leaders of both sides, but it is still necessary to have the wholehearted participation and cooperation of the practicing physician if success is to be achieved. The main tools are the providing of educational information, encouragement, and the exercise of patience by both sides. Laymen in our company must understand the physician as an individual. Originally, he chose the long arduous training for a profession dedicated to healing the sick. The intimate relations with his patients exclude all others; he justly resents any intrusion by a third party. Often, he just doesn't understand the third party, and it is our job to help him understand.

This is an age of medical specialism, a response to public demand and the challenge to the young physician to excel in a particular field. Throughout the United States there are now eight specialists to every nine doctors in general practice. In California, where there is a physician for every 590 inhabitants, compared with one per 800 population countrywide, 60 per cent of the physicians are specialists. A greater number of the larger, better-equipped hospitals has resulted in a relative increase of the number of pathologists, anesthesiologists, and chest surgeons.

These changes in the type of medical practice have produced better but more costly medical care. More people are demanding the highest type of "Cadillac-model" service when admitted to hospitals; when there is a consultation, they want the leader in his specialty.

Consider for a moment the long period of preparation for practice by the specialist. Add the demands of military service to his graduate training, and the result is an average of 12 years from the time of college entry until, at approximately age 30, he enters private practice. His early years are economically lean; high income taxes keep down his savings; he has neither Social

Security nor a pension plan. When, after a long struggle, he obtains a staff appointment to a large hospital, he finds that there are demands on his time for teaching, research, and care of charity patients. Priorities of staff service render it difficult for him to gain admission to a hospital bed even for his seriously ill patients.

There is a long tradition of the physician setting his own fees without having to explain to the Blue Shield or to an insurance company why a prolonged, complicated, and worrisome case merits a higher price tag. There is a natural resentment if the agent has sold the patient an inadequate type of policy, perhaps using deliberate deception as to the benefits. Among other worries which beset the private practitioner are the inroads made by closed-panel prepayment plans of labor groups, welfare funds, and the Veterans' Administration. Here, selected physicians are used, and freedom of choice of other doctors is denied the insured. The threat of socialized government-controlled medicine is now a dark cloud on the physician's horizon. He is conscious of the plight of his brother physicians in England and Scandinavia. The recent landslide victory of the Conservative Free-Enterprise Party in Britain indicates to him that the other great English-speaking country is fed up with socialism. The American doctor looks to insurance companies to provide a solution for the high cost of medical care through proper financing. He is beginning to realize that insurance helps his patient to pay his bills without attempting to dictate the type of care.

As physicians begin to appreciate our efforts to solve the problems of medical economics by health insurance prepayment plans, they look with particular favor on major medical and comprehensive benefits. In turn, we are educating them to the need for curbing abuses such as overcharging and the overuse of hospital facilities.

One of the greatest sources of irritation to the physician is the amount of paper work. For a single patient, this can be cumulatively mountainous. Health evidence may be necessary not only for insurance and disability claims, but for birth, marriage, periodic checkups, pre-employment, health problems at work, foreign travel, military service, retirement pension, and

Social Security. Mindful of his patient's social and economic welfare, the modern physician must maintain good medical records. Obviously, anything we can do to ease his clerical burden is a godsend. As you know, we have made real progress in this respect in the development of uniform claim forms and in designing a simplified attending physician's statement to be used for the life insurance application. So far, a high percentage of the insurance companies have cooperated; with the help of medical directors, we aim for an even higher acceptance. In our continuing education within our own industry, we must always emphasize honesty and forthrightness on the part of the salesman and combined integrity and efficiency by our claim adjusters.

Health insurance has become really big business in recent years; already the premium volume approaches that of life insurance. For a moment, survey the figures for benefit payments in 1958:

For health insurance they were, in billions of dollars:

0.4	by non-life companies
2.2	by life companies
1.8	by Blue Cross and Blue Shield
0.2	by independent programs
4.6	— a grand total of 4.6 billions.

For comparison, the *life* insurance benefit payments were:

2.9	billion in death benefits
4.3	" in living benefits
7.2	" in total

In other words, this robust baby of the past decade paid out last year 40 per cent as much as its century old cousin. The doctor is the key to the expenditure of all this money.

Now we come to *the third category — the education of the local medical profession.* To be influential in this sphere, it is essential that the medical director become active in his county and state medical societies and in the American Medical Association. In this way he is better able to interpret the insurance aspect of common problems to his fellows in the knowledge that he will be listened to by his peers with a respect to which no layman could aspire.

Here, it might be well to indicate the four levels at which liaison is established by the Health Insurance Council with the medical profession. (1) A liaison committee consisting of top executives of the American Medical Association and the Health Insurance Council. This group grew out of (2) Summit conferences between insurance companies and the American Medical Association Trustees. Having personally attended the meetings of September 1958 and September 1959, I can tell you that there is a real spirit of harmony and mutual confidence existing here. In other words, as a member of the American Medical Association you have the green light from your informed and devoted leaders to vigorously support the wise and practical measures that organized medicine is sponsoring. As a member of the AMA, you are in a unique position to understand both sides of the health insurance problem and to interpret each side to the other. At a third (3) level of liaison is the American Medical Association Council on Medical Services, which includes its Committee on Insurance and Prepayment Plans. On June 5, 1959, there two groups met with the Medical Relations Committee of the Health Insurance Council in Atlantic City, in the creation of an effective channel of communication. Among the items discussed were (1) relative value fee schedules and insurance study committees of medical societies; (2) the insurance aspects of the regional meetings which are being held by the Committee on Insurance and Prepayment Plans throughout the country this year; (3) the pamphlet series and other publications on medical economics which are being issued by the Council on Medical Service; (4) medical association activities as the result of the American Medical Association resolution recommending "commensurate" fees for the aged with low family income and modest resources.

The AMA's Committee on Insurance and Prepayment (of its Council on Medical Service) is sponsoring a series of regional conferences dealing with three major issues.

1. Demands of organized labor for panel practice programs. AMA's Committee on Medical Care for Industrial Workers observes that organized labor is demanding special programs for its members which might lead to discrimination in communities. These special programs for the employed group

do not necessarily improve availability of care for others in the community.

2. A resolution sponsored by the Oregon Delegation recommended a regional conference on prepaid health insurance.
3. The general problem of care of the needy aged.

Four conferences have been held in Pittsburgh, Memphis, Denver, and Portland. Three others are planned for Minneapolis, the Northeast Coast and the Southeast Coast areas. These will reach every state medical association.

Health Insurance Council representatives have been invited to participate in these programs and have done so. Other groups, such as farm groups, employer groups, chambers of commerce, etc., have also been invited.

A fourth level of liaison consists of staff conferences between the American Medical Association and the Health Insurance Council; for example, frequent contact is maintained between Howard O. Brower, Secretary of the Council on Medical Services, and others on the staff of the Council on Medical Services, *and* our own Bert Whitehall, Ben Kendrick, Lou Orsini and Clark Bryan. Our staff also furthers relations with a number of other national organizations such as the American College of Physicians, the Academy of General Practitioners, the American Society of Internal Medicine, and many others.

These four channels communicate with the American Medical Association directly, and a number of the meetings are necessarily held in Chicago. Work at the "grass roots" level is carried on by the State Committees of the Health Insurance Council. I would like to pay tribute to some of the dedicated workers of our Medical Directors Association who serve on these state committees. I think, for example, of Drs. Maurice J. Taylor of Salt Lake City, George Young of Des Moines, and, coming from west to east, Ken Schaefer of Minneapolis and Paul Reinartz in Florida. That has been a particularly difficult area, and Paul has done a grand job for us there. Then, Ennion Williams of Virginia, Charlie Spivey down in South Carolina, Clifton Reeder in Chicago, Ed Getman and Norvin Kiefer and Tom Alphin in the New York City area, Frank Warner in Boston, my own colleague, Ken Brandon in Connecticut and, last but not by any means last, Bert

Schwarz in New Jersey. Later, in the discussion period, I'm going to have Bert Schwarz give us a few words about what actually happens at the level of the state committee.

If you have not already done so, I would urge that you get to know the members of your state committee and use these contacts as a source of information, at the same time volunteering your services as a speaker before hospital or county groups. Your state committee chairman will be glad to furnish you with a so-called "Speaker's Kit," which can be the basis for a talk before members of your profession.

Every physician, nowadays, has daily contact with the insured, whether it be through life insurance examinations, workman's compensation, or health insurance claim forms. Members of the profession meet their colleagues of the insurance industry in many aspects of civic and community life — church work, hospital trusteeships, welfare chest drives, and various recreational areas. Very often, the medical director can contribute through administrative advice or as an effective sounding board between the insurance business and the medical profession. The medical director not only can himself appear on programs of state and county medical society meetings, or before hospital staffs, but he can also arrange for competent speakers from the insurance industry or from the Health Insurance Council to participate. Subjects which, at the present time, are most pertinent and on which the medical director should be well informed are (1) the relative value fee schedules which will permit us to underwrite benefits more closely conforming to the real needs of our insureds; (2) our program of standardized claim forms designed to ease the physician's burden of paper work; (3) a socialistic trend in government and its dangerous implications for the future of both medicine and insurance.

We medical directors are the logical and ideal persons to deal directly with the attending physician. Together we can create a partnership which will help maintain a favorable economic climate for the insurance industry. In return, the industry must respect the doctor's confidence and do all we can to make his lot as unrestricted and untroubled as possible. The success of the insurance industry depends to a great extent upon the practicing

physician. We need his cooperation and good will, and we should not forget our reciprocal obligations.

It is up to us to keep the medical profession properly informed and to offer guidance toward the right attitude. In building the bridge of understanding between doctors and insurance, the medical director should be ever mindful of his unique qualifications.

MODERATOR WHITEHALL — As I said in the beginning, and Grant just reiterated in his excellent remarks, we are vulnerable to the attitudes and practices of those who provide care, and, perhaps, nothing influences those attitudes quite so much as the irritation over paper work. Some doctors commented that the fountain pen is rapidly replacing the stethoscope, and they blame us a great deal for it, necessary as it may be.

One of the constituent organizations of the Health Insurance Council is the International Claim Association, and it is under their jurisdiction that physicians' attending forms or so-called claim forms are developed and administered in the health insurance business.

When it came to meeting this problem of allaying the irritations so that we could talk to doctors without running into a full head of steam, we turned, quite naturally, to this member organization, and they have provided leadership to the business in developing a uniform forms program. However, the position of the individuals who must head up that program is very much like that of the prophet in his own country. This is not a matter of carrying education out to someone else; this is a matter of education beginning at home, and it becomes very difficult, to say the least.

I have often thought that, perhaps, the selection of the Chairman of the Uniform Forms Committee this last year or so has been particularly fortuitous. He has many of the characteristics of the freight train. You set him in motion and there is very little that can stop him. As a matter of fact, he needs to be that way, because there is a great deal of controversy over this problem of how do we condense the questions, how do we agree on one single set of questions.

We have come very close to that, but it would not have happened without the dynamic and aggressive leadership and the

cooperation that he has been able to develop with his colleagues in claims offices in other companies. It is with a great deal of pleasure that we will now hear from the Executive General Manager of the Prudential Insurance Company, Chairman of the Uniform Forms Committee of the Health Insurance Council, Mr. William J. McBurney.

WILLIAM J. MCBURNEY
Chairman
Uniform Forms Committee

We have discussed in these meetings our effort to improve the relationship between the industry and the medical profession, Dr. Irving has just talked on that point, our effort to achieve a better understanding of each others problems and greater cooperation in seeking a solution to those problems we have in common. We have several of substantial magnitude, there is no question about that.

One source of irritation — Bert has referred to this — and the word "irritation" as used here is for some of the doctors a mild one indeed, which has slowed the achievement of our goal, arises in connection with the forms on which insurance companies request information from doctors for underwriting and claim purposes. Members of the medical profession have been complaining about these forms for years. Some doctors would complain, of course, about completing any form; but, obviously, there is nothing we can do to eliminate all forms. There are some forms essential to the insurance business, and most doctors appreciate this. However, they do object to some of the questions asked and to what appears to be the unnecessary variety and complexity of these forms. Unfortunately, those who have had occasion to review some of these complaints have found justification for too many of them.

Some of the insurance companies took these complaints into consideration when they drafted their forms. But too often the industry was principally concerned with making sure that the forms elicited all the information they could possibly need for

their purposes. In too many cases, and this is particularly true of claim forms, the questions were framed and the forms were designed without benefit of medical consultation. The wording of the medical questions suffered accordingly. And what was more irritating to the doctors was the fact that too many forms contained "inspection" questions.

I would like to repeat a few examples of the kind of questions they complained about:

"Describe fully how the insured is spending his time."

"Does he visit his office or place of business, and, if he does, for what purpose?"

"Do you know anything from hearsay or otherwise about this claimant's character, reputation, and good standing?"

"If the present address is rural, give the RFD number and the nearest trading point."

These are questions taken right from the claim forms; these are not something I have made up as horrible examples.

"Has the patient or any member of his family ever had or received treatment for a specific disease during their lifetimes?" This would be a big order.

Other forms asked questions like these, which are also taken right from the forms.

"If you administered any medicine to the policyholder, what was it?"

"How did it affect the patient?"

"What symptoms have developed since the treatment began?"

"What is the patient's present condition?"

And this question —

"What kind of medicine do you practice?"

Then there were requirements that the form, after the doctor had answered a series of questions like these, must be completed in ink, in his own handwriting, and his signature, in some cases, had to be affixed before a notary public. There were actually a few cases where the agent, in addition, had to testify that he had seen the doctor sign this form before a notary public.

The variety of questions was another complaint. These results

are from a very small sample. The companies had found 26 different ways to ask for the diagnosis; 34 different ways to ask about the insured's present condition; 36 different ways to inquire about his treatment; 42 ways to inquire about the prognosis and, for something as simple as the identity, they had even found 18 different ways to inquire about that. Eighteen different ways to inquire about the identity of the insured! All of us would agree that a doctor who had to contend with many of these forms had cause to complain.

In 1946, Committees of your Association and the International Claim Association and the American Medical Association decided to see what could be done about providing uniform simplified claim forms. This was a large undertaking. There were many concessions that had to be made by the industry to achieve a result that was likely to be satisfactory to the medical profession. But, finally, they agreed on a set of forms, and they were good forms. Unfortunately, however, all of this had taken so long that by the time the forms were printed, there had been such an increase in the multiplicity and complexity of insurance coverages that the "new" forms were already inadequate. So the ink was hardly dry on these forms before the Committee had to start all over again. And the second time around, it wasn't much easier.

One reason why it is difficult to sell uniform forms to all companies is that some companies have spent a great deal of time and money designing forms ideally suited for their own purposes. Some of these forms are simple and brief and well designed. The companies using them have a natural pride of authorship and strong opinions about the need for a change. They are reluctant to accept the fact that a variety of forms, even good forms, can present a problem for a busy doctor. Others go so far as to suggest that by making repeated concessions to the doctors we are, in effect, letting the doctors write our insurance contracts. For example, some companies issue policies that require house confinement. If the doctors refuse to answer the question regarding whether they prescribed house confinement, the company can either insist that the insured produce this information, delaying the claim payment and incurring additional expense, or the company can decide that it is impractical to administer claims

under a policy with this provision. If the company removes the requirement, it could be argued that to this extent the company has let the doctors write the insurance contract. Also, there is no authoritative definition of what is a long form or what is a complex form; that is a matter of opinion. It is not easy to convince a claim man that the form he has been using for 10 years, a form he could complete himself with his eyes closed, is a complex form. And, in a lighter vein, it is interesting that it should be considered a complex form by doctors who are responsible for the hieroglyphics that so many of them put on hospital records and on prescription blanks. These are some of the reasons why some companies were not enthusiastic about still further changes in claim forms.

And, unfortunately, members of the medical profession who have had to contend with poor forms, and too often a variety of poor forms, are now hypercritical and frequently they are unwilling to acknowledge that an insurance company should be given much more than the name and the address of the patient.

Fortunately, however, there are a sufficient number of responsible people in both the industry and the medical profession who can be objective regarding this vexatious problem. As a result, several sets of uniform simplified claim forms were designed. The most important set, because it is used most frequently, consists of forms for sickness and accident claims under both group and individual policies. After these forms were approved by the Health Insurance Council, they were reviewed with the Council on Medical Service of the American Medical Association and finally approved by that Committee on behalf of the American Medical Association. A booklet describing these forms was distributed to the insurance companies in 1957. And in 1958, another booklet designed especially for the medical profession was distributed to physicians in 37 of our states. Approximately 135,000 of these booklets have gone out. If you have not seen this booklet, I would repeat Dr. Irving's suggestion that you look this up when you get back to the office, because this booklet tells the complete story regarding these forms.

After the forms had been approved, we then had the job of going back to convince all the insurance companies that they

should use these forms. You can appreciate the magnitude of that task. However, our efforts so far have met with encouraging success. Companies with over 80 per cent of the total group insurance premium income are using the group form which is described in the booklet as GD-1, Group Disability-1. The ID-1 was designed for individual sickness and accident policies and companies with over 60 per cent of the total premium income of the individual sickness and accident business are using this form. Both the GD-1 and the ID-1 are identified by the Health Insurance Council symbol which indicates that they have the approval of both the Health Insurance Council and the American Medical Association, and the booklet informs the doctors of that fact; that point is *emphasized* in the booklet.

Criticisms from some sections of the medical profession continued, however, for several reasons. In the first place, there were some companies who had not yet adopted the uniform forms. There were a number of companies who had agreed to use the forms only when the stock of their own forms was exhausted. There were some companies that had enclosed claim forms with every policy at issue and found it impractical to contact each insured to substitute a new form. There were other companies using the forms without the symbol, since the design of the symbol was approved some time later. As a consequence, it was quite a while before any number of forms that could be readily identified as Health Insurance Council forms began to appear in the doctors' offices. This encouraged some medical groups to proceed with what they had been threatening to do since the early forties, and that was to design forms of their own. They were saying to us, in effect, "We have waited for you long enough. We will now design our own forms, and we will complete these forms and no others." Consequently, to our knowledge, there are 15 state medical organizations that have their own claim forms and there may be more. These states are: Arizona, California, Idaho, Iowa, Kansas, Kentucky, Maryland, Montana, Nevada, New Mexico, North Dakota, Ohio, Oklahoma, South Dakota and West Virginia. There are, in addition, 8 other smaller medical groups who have their own claim forms, such as the San Diego County Medical Society, and the Southwest District of the Los Angeles County Medical Society and the Medical

Society of Knox County, Illinois.

Too many of the claim forms designed by these doctors are entirely inadequate for claim purposes. Too often, if a doctor used one of these forms, the company would find it necessary to go back to him, or back through some other source, for the necessary information, incurring some additional expense and a delay that could be embarrassing to both the company and the insured.

I have samples of some of the medical society forms with me if anybody would like to look at them.

What all of this meant was that, in spite of our efforts and accomplishments, there was an increasing number of doctors who had designed and were insisting on using their own inadequate forms. And so this came back to us as another problem.

The doctors voiced a strong preference for a single all-purpose claim form that they could stock in their offices. A single form which was just a combination of all the approved forms now in use for these claims would have been as lengthy as some of the horrible examples the doctors had been seeing 20 years ago. So, it was necessary for the industry representatives to make further concessions, to eliminate more questions, to agree on a form that would meet the doctors' demands; but a form that would still be useful to the industry. Finally, a single form of 12 questions in length was produced. The combined condensed form will not supply enough information for all claims. It is a compromise between the industry's requirements and the requests from some sections of the medical profession. We will make formal application for approval of this form to the Committee and Insurance of Prepayment Plans of the American Medical Association. If this single form is approved — this combined condensed ID-1 and GD-1 — we will offer it to the doctors now using their own forms.

We will provide a sample supply and urge the doctors to acquire additional forms as they need them. A printing on the reverse side of the single form asks the doctor to attach that form to the one he received from the insured or the company in order to assure proper delivery.

Another form which gave the doctors reason for complaint is

the form that is used for Weekly Premium Disability claims. These claims arise under weekly premium insurance which is sold largely throughout the South and in some of our industrialized areas. The insurance is sold in small amounts. The doctor's complaints about the forms used for disability claims under these policies were the same. There was a large variety of complex forms and, under these policies, forms have to be completed each week while the insured is disabled. It might take a doctor three minutes to spray a policyholder's sore throat, and a half an hour to complete the 12 forms the policyholder brought in with him. We thought this was an exaggeration, but we know of one case where there were 7 forms to be completed on one life once a week.

In cooperation with the Life Insurers Conference, where most of the companies writing this business are represented, a new form — a modified version of our ID-1 form — has been prepared for these claims. This form will also be submitted for approval to the Committee on Insurance and Prepayment Plans of the American Medical Association.

Another form with which we have been concerned is the attending physician's statement used for underwriting purposes. Much of the work on this form has been done by your Association, and has been approved by the Medical Section of the American Life Convention. This form has been tested by a number of the larger companies for several years with almost complete acceptance. The last important objection was overcome when the wording of Question 5 on the form was changed from "Please record any other information which might have a bearing on this person's insurability" to "Please record any other information which might have a bearing on this person's health." This form will soon be submitted for approval to the Committee on Insurance and Prepayment Plans of the American Medical Association.

The American Medical Association will be asked to approve the five questions on the form and a plan whereby each company can use its own heading, an introductory paragraph and close. In other words, the Health Insurance Council symbol may be printed on the form so long as the questions alone are used as approved.

Mention was made here today regarding the problems in

Canada. You will be interested to know that we have been keeping in touch with our counterparts in that country, and we have sent them copies of everything we have developed here. They have prepared several forms of their own and, at our suggestion, may stay the printing and approval of these forms until they can study our proposals further.

The important points we will stress in our conversations with the representatives of the medical profession are that the insurance companies have been substantially reducing their requirements in spite of the increasing variety of insurance contracts that are being written everywhere; that, in addition to these new policies, the insurance companies still have to provide for claims under all the other insurance in force, the old and the new together present a very formidable problem; that the doctor in completing one of these forms is performing a service for his patient and it is his patient who may be inconvenienced when a claim cannot be paid promptly since that patient may intend to pay his medical bills out of this claim payment.

In summary, we have approved uniform claim forms for almost all types of claims. The most important are described in the booklet. These forms will originate with the companies. We now have Health Insurance Council approval for three additional forms:

1. A combined condensed version of the ID-1 and GD-1 to be offered to doctors to stock in their offices.
2. An attending physician's statement for underwriting.
3. An attending physician's statement for weekly premium disability claims.

We will submit these three forms to the Committee on Insurance and Prepayment Plans of the American Medical Association for consideration at their next meeting.

All of us appreciate the assistance you and your Association have provided to us as we have tried to cope with these claim and underwriting form problems.

MODERATOR WHITEHALL — Thank you, Bill. I'm sure you will get questions. We will take just a few minutes to answer any there may be.

I have one, Bill, I am sure you can answer this: "What is this going to do to the present program of forms that are in existence? If you put out this one program for a single form, what do you think the effect will be?"

MR. MCBURNEY — The GD-1 and the ID-1 forms described in the booklet will originate with the insurance company, and we will continue to urge all companies to use them. Each one individually is simpler than the new combination form we have described.

The new combination form will be used by the doctors and stocked in their offices. It was designed only to answer the demand from some medical groups for a single all-purpose form. We will urge doctors now using a form of their own design to substitute this form because it is better for their purposes and ours and it is acceptable to most of the industry. We hope this effort will have no adverse affect on the program described in the booklet.

MODERATOR WHITEHALL — Thank you, Bill. I have a question here which, I assume, Mr. Killion might answer. "What is the relationship between the Health Insurance Council and the Health Insurance Association? Are they competitors or partners?"

MR. KILLION — The Health Council is an Association which is made up of the various insurance company trade associations. The components of the Health Insurance Council are the Life Insurance Association, the Casualty and Surety Association, the International Claim Association, and, as one of the trade associations making up the Health Insurance Council, you find the Health Insurance Association of America.

The Health Insurance Association of America is, in effect, the counterpart in the health field of the Life Insurance Association in the life field.

MODERATOR WHITEHALL — I have a very interesting question here that is addressed to Dr. Irving. I am interested too, in how he may answer this one. "How can we deal with the chiropractor in major medical coverage?"

DR. IRVING — That has been a problem which we are answering through what is known as our Paramedical Subcommittee, which is now headed by Dr. A. J. Robinson of the Connecticut

General. This is a problem which, at first, we treated somewhat lightly, but our Group Department told us that they were having an increased number of claims being submitted. In general, if a claim is reasonable and it is a group contract, it has been paid up to the present time in some instances. But, as far as establishing with the Chiropractors' Association any type of guaranty, we certainly have not done that, and I doubt that Dr. Robinson is intending to do anything about it. Let's say that much of this territory is now being explored for future use.

MODERATOR WHITEHALL — Here is one that I judge might go to Mr. Killion: "How can the padding of hospital bills be discouraged?"

MR. KILLION — I certainly wish I knew the answer.

MODERATOR WHITEHALL — This question might be addressed to any of the three who would like to answer it: "In Florida, they have done very well in setting up an organization under the Health Insurance Council State Committee." I think that is true of a number of states and, without listing those that are further ahead than others, we know that there is a variation. The question is this: "How can the slower moving states be stimulated to become active in the Health Insurance Council work?" Do I have any volunteers, gentlemen?

MR. KILLION — Bert, I would normally have asked you for the answer to that.

MODERATOR WHITEHALL — Well, I think we take our instructions at the state level from you gentlemen and from your committees.

MR. KILLION — You're too modest.

MODERATOR WHITEHALL — If you're putting me on the spot, I think each one of the speakers this morning emphasized that this is a matter in which the medical directors should and ought to become interested and active. I think we should remember that this is supposedly a democratic country; that if it were not a democratic country, nobody would move except as he was told. Sometimes, I feel that volunteers are about that way, that they do not move until somebody pushes them out.

We sit in our chairs, preferably in the back row, and wait for lightning to strike. Unfortunately, or fortunately, that is

not the kind of country this is. If you want to get into this, or any other voluntary type of organization and make it work, the responsibility is with the individual, whether he is a medical director, a department manager, or other executive or whatever.

MR. MCBURNEY — May I make one comment to that? I think you can increase and encourage the activity of the State Committees by consulting them more frequently. If you find out who they are and you consult them regarding some of the problems in the area, you will automatically encourage them to do a little more work and perhaps even to enlarge their ranks to accommodate the volume of problems that you will be referring to them. Some of these State Committees are dormant because they don't get too much from the companies; they haven't too much to do.

MODERATOR WHITEHALL — During Dr. Irving's presentation, he made reference to a number of doctors here who are active in one way or another on State Health Insurance Council committees, and designated particularly one doctor whom he wanted to have given two or three minutes. Dr. Bert Schwarz of New Jersey, will you come up?

DR. SCHWARZ — My concept of brevity is, perhaps, like that of the editor who instructed his reporter in respect to stories that he submitted on fatal accidents to be less voluminous. The result, after a few tries, was somewhat as follows: "John Smith looked up the shaft to see if the elevator was coming down. It was. Age, 45." I shall be brief but not quite so laconic.

About two and a half years ago, New Jersey was asked by the Health Insurance Council to step in as a pilot operation to see what could be done to cement more firmly the relations between the industry and the profession. In that matter was, first, a step of organization, in which industry was represented by 12 representatives. The Health Insurance Council was then divided equally into two Committees, representing Medical Relations, and the Hospital Relations Committee.

We then, in turn, sought out the leaders of the profession at the state level, and then formulated a Joint Committee. The Medical Society of New Jersey appointed many of their chief

officers to that Committee, and they met with the Health Insurance Council Committee.

The meetings were organized on the basis not only of transacting business, but also in a social atmosphere, so we would have a luncheon or dinner meeting.

Our first step was to reaffirm methods that might be most successful in accomplishing the major objective of both the industry and the profession; namely, the preservation of the free enterprise system, both in medicine and in industry. That was not a difficult task.

The second step was how to implement this. The Committee was jointly responsible for a series of articles in the *Journal of the Medical Society of New Jersey,* that dealt with the broad field of commercial insurance, the matter of policies issued, the matter of benefits, and some of the problems that were involved. There were four such articles.

Then, on the state level, at the State Society meetings, and at the county level, in specialty meetings, individuals or panel discussions were presented with the idea of reaching the individual doctor. You reach the doctors in such meetings who are generally the leaders of the movement, but, unfortunately, the "grass roots" level approach is not accomplished that way. The "grass roots" approach is you, the medical director, in the greatest degree, to start with.

You have to be almost as versatile as Mr. McBurney referred to, in the doctor who had those different questions to answer on different forms. It is something like the doctor who traveled into a small town, stopped at the barber shop and, during the course of his shave, the quite garrulous barber nicked him several times, but, unperturbed, the barber took some paper and plastered it on his face and continued on. After he was through, the barber said, "Is everything all right?" and the doctor said, "Oh, yes. I see you're very versatile. You're not only an orator and a barber, but you're also a butcher and a paperhanger as well."

I think the doctor, in filling out this multiplicity of claim forms, sometimes had a real "gripe." But more so is the misunderstanding between the average doctor and his concept of what an

insurance company's largess may be in paying out claims. There, the medical director has to be extremely versatile, because he is going to deal with many doctors, with many different views.

Certainly, we know that when there is a great departure from a normal fee, we know what to do about it; but, it is the small flea bites, which Bert spoke about before, that cause us the most annoyance and, in the long run, may be the straw that breaks the camel's back. The aggregate is very serious. And so it is that we, as medical directors, should take it upon ourselves to communicate personally through any channel with the doctor involved.

In this respect, I might say that we should also remember that the doctor, on the outside, has a legitimate complaint, too, because, for over ten years, we have not fully recognized the increased cost of medical care. I think we, as responsible physicians, should take it up with our other associates.

MODERATOR WHITEHALL — I have one more question here. "What about the responsibility for quality of medical care? Does the insurance business have such a responsibility? In view of paramedical disciplines and specialty boards, is this responsibility thrust upon us? If so, how do we meet it?" Well, that sounds like a medical relations question, Grant.

DR. IRVING — That's certainly a big question, and could take us a long time to answer. Really, what the question is asking is, do we, because we are supplying the finances, have some form of discipline that we can exert over the doctor? There, of course, you're getting into a very delicate area.

I don't think I feel competent to answer this question at this point. It is a question that has to be individualized, with particular situations. If the insurance company feels, for example, that a charge is extreme and out of line, I don't think that they should try to take it up immediately or directly with the doctor involved without giving a good deal of thought to it, and then, if they do so, it should be done in a very careful manner. If the opposition is still met, then, I think, the Insurance Committee of the Medical Society is the place for this to be taken next, rather than directly to the so-called Grievance Committee; in other words, it is a progression of various areas for discussion, keeping in mind that both sides of the question must be clearly understood

and that there should be no element of irritation expressed by the company at too early a stage.

MODERATOR WHITEHALL — To close this, each of you gentlemen has urged that this group of medical directors can help. Christmas is coming, and if each of you had one thing to ask this group, what would it be? I'll call on you in reverse order of your appearance on the program. Would you just say about two or three sentences as to what you think the people in this audience should do specifically to help your part of the program? What can they do, Mr. McBurney?

MR. MCBURNEY — Well, much that you can do has already been described to you in these two talks by Ray and Grant. I would say quickly, to familiarize yourself with the forms, with the booklet that we described; to see to it that your company is using these forms; that you urge them to do it, and help them to understand the medical profession problem. Unfortunately, one of the things that has complicated our dealing with this problem in the industry, speaking frankly, is the fact that some of our people in our Claim Departments — and this is not confined to the small companies — have seemed to lack this understanding of the problems that the doctors have, and some of the bases for their complaints.

If they understood those more completely, we could sit down in a more friendly atmosphere, perhaps, to help resolve some of these problems. We think we have done the forms area with this combined form. We think we have done it about as far as it can be expected to go, and you can help us to encourage your company to use these forms and use them with understanding.

MODERATOR WHITEHALL — Grant, what would be yours?

DR. IRVING — I would say, stay informed. As we pointed out, try to keep in touch with current legislation; become active in your local medical society; find out who are the members of your State Committee and go to them and offer to give them as much assistance as you can.

MODERATOR WHITEHALL — Ray, what do you want from Santa Claus?

MR. KILLION — I would say that the most important contribution that could be made by the medical directors would be to

simply exert their medical influence, not only within the company, but also in the community, maybe more particularly in the community.

For example, I was asked the question, "How do you control padded hospital bills?" When I said I wished I knew, I meant it, and I meant it more sincerely, maybe, than a lot of you realize. This is an area, depending on how you define padded hospital bills, in which a medical director, who is always active in his community hospital, can be helpful.

Many times, what appears to be a padded hospital bill may be, in fact, a misuse of hospital facilities, such as over-utilization of laboratory services or other similar things. You also have the problem in the hospitals of early admissions, delayed discharges, and so on. If you, as trustees or staff members of hospitals or through other connections, will exert the influence that you have in your community hospital to get medical supervision of these problems, you will be making a wonderful contribution to this whole business.

MODERATOR WHITEHALL — Thank you, gentlemen, for being such a good panel. President Harry, it's yours.

PRESIDENT KIRKLAND — Gentlemen, this has not been idle talk. I think the whole gamut has been covered, and I am certainly hopeful that you will take this very much to heart and do something about it.

Now, it has been customary to present the new officers at this time. However, they were presented last night. I have only one observation to make. Is Al Larson in the room? Apparently not. I just wanted to comment that the Nominating Committee appears to have made a singular decision in keeping the funds of this outfit in Hartford. I don't know whether or not there is any meaning to that.

At this point, I am going to ask Ennion Williams to come up here. I have had a pretty good time. I really enjoyed myself. I hope it has been a good meeting. I thank everybody who made it so. But I'm really going to have a good time now, gentlemen.

You all know this is your new President. He has only a year to go, that's all. He just has to worry for a year and sort of work around, as I've been doing, and so forth and so on. I

never got a bigger kick out of anything than turning over to Ennion Williams this gavel. But I thank you all for sort of bearing with me.

PRESIDENT-ELECT WILLIAMS — I hope you sympathize with me in succeeding Harry Kirkland. It's like trying to jump aboard a fast-moving train. It's impossible to keep up with him, but it has been a lot of fun, watching him. He has done a wonderful job. He is a very complex fellow, with his unicorns and pathological statements and so on. But I think I need someone who knows him better than I do now to really help us close this meeting. I would like to call on our good friend, Lauritz Ylvisaker.

DR. LAURITZ S. YLVISAKER — President Williams, Dr. Kirkland and Members: I am very pleased, Ennion, to comply with your request to speak for the Association and bring to Harry our sincere thanks for a perfectly delightful meeting. In addition to speaking for the Association, I have a very strong personal desire to pay tribute to him because of my long, close association with him in our work and the many pleasant contacts I have had with him through the years.

Just a week ago, I had the privilege of attending a dinner which his Company associates gave him on the occasion of his Twenty-fifth Anniversary with the Company. At that dinner, a scroll was presented to him on which was inscribed a wonderful tribute which I have received permission and personally wish to include in part of my remarks:

To HENRY B. KIRKLAND

> able Director of our Medical Department, who commands by trust and example, who delegates willingly, supports strongly, and asks nothing he is not ready to give himself;....a staunch advocate of the welfare of his colleagues; energetic, tireless, enthusiastic in the day's work,....a scientist learned in the intricacies of his profession; an underwriter discerning and judicious; in athletics a competitor of skill and stamina; in club and association a worker ever ready to serve and give

....world traveler; loyal Princetonian and loyal Prudentialite;....warmly acknowledging the bonds of old comrades and old memories; physician, leader; friend: To you, HARRY, we herewith subscribe our names in admiration, affection and esteem.

October 14, 1959

That to me is a great tribute coming from all who had been associated with him, many of them for the full twenty-five year period. I was also invited to sign the scroll and considered it an honor.

No one can paint a better word picture of Harry and I shall not attempt to do so. All of us in our Medical Directors Association have learned to know Harry as he is described in that picture and I am sure we all want to pay him the same tribute.

Harry has served on many of our Association Committees, has always given every assignment his best, and no one is ever left in doubt regarding his position in any controversy. Harry was Secretary of our Association for ten years from 1947 and his extemporaneous remarks always spiced and added flavor to our meetings. From Secretary, he rose to Vice-President, President-Elect, and to President for the year 1958-1959 now closing. He has been a vigorous and forceful leader during the year and has conducted our current meeting in flawless fashion. His program was practical, interesting, and instructive and he even broke down and let the ladies in, with the result that we have had one of the most pleasant meetings in the records of our Association.

Last year at Hartford, we started the custom of giving the outgoing President something tangible to which he could attach all happy memories from his year as President. Ennion has given me the honor, Harry, of presenting this silver plate on which is inscribed:

Henry B. Kirkland, M. D.
President

The Association of Life Insurance Medical Directors of America

1958 - 1959

This inscription is brief but included in it is the respect we have all developed for you, our thanks for all you have done for the Association, particularly during the last year, and our best wishes for many more active years in our Association.

You will all know that Harry went away to war for five years in the early nineteen forties. In addition to his contributions to the war effort in hospitals in England and on the continent, he brought back to us a lovely girl who, as Mrs. Kirkland, has quietly identified herself with Harry in our Association and has endeared herself to us all as "Marge," as she has become known. She has graced our meeting with her presence, and has been a busy hostess making the ladies in particular feel happy and at home. I had hoped we could have Marge here but she modestly asked to be excused and I can only ask Harry to give her our thanks for all she has done to help make this meeting such a happy and successful one. Many thanks also to her attractive assistant hostesses and the many others who have helped to make this meeting a memorable one.

DR. KIRKLAND — My most sincere thanks. (The remainder of Dr. Kirkland's remarks were lost in the applause.)

DR. WILLIAMS — Thank you very much, Ilvy. No one could do it like you, and we are all greatly indebted to Harry, Marge, and all the members of Harry's staff who have worked so hard at this meeting.

Our meeting next year will be in this building on October 19, 20 and 21. To assist me with the hotel arrangements and convention requirements, Dr. Howe and Dr. McGurl have kindly agreed to help. We have a Program Committee consisting of Dr. Marshall Lee, Dr. George Robb, and Dr. Howard McCue. If any of you have any suggestions for the program, or any contributions to offer, I will be glad if you would send them to me.

Is there any other business? If not, let us carry on during the next year in the best interests of our patient, the insured public, and familiarize ourselves with claim forms, standard forms, and exert a good medical influence.

The meeting is adjourned.

The following doctors were present at some time during the sessions:

F. B. Agee, Jr.
C. B. Ahlefeld
A. C. Albright
T. H. Alphin
Joseph Altman
K. W. Anderson
G. B. Appleford
N. L. Armstrong
A. B. Ayers

Bernard Baillargeon
N. J. Barker
G. P. Barnett
C. C. Beach
M. F. Bell
D. M. Benford
R. A. Benson
F. B. Berry
F. P. Bicknell
W. R. Bishop
D. G. Bohn
William Bolt
J. M. Bond
D. T. Book
M. T. Boss
S. H. Boyer
E. L. Boylen
W. R. Bradley
H. J. Brekke
E. J. Brogan
A. W. Bromer
M. T. Bronstad, Jr.
C. H. Brown
F. R. Brown
H. B. Brown
R. F. Buchan

D. B. Campbell
R. L. Candage
A. W. Capon
P. H. Charlton
H. E. Christensen
N. S. Clark
E. Y. Clarke
R. B. Cleveland
M. H. Clifford
W. P. Coburn
M. S. Cole
G. R. Collyer
H. L. Colombo
B. R. Comeau
M. A. Compton
F. R. Congdon
E. P. Cook
J. L. Cook
J. P. Culpepper

B. A. Dawber
B. W. Daynes
Aniceto Del Rio
F. E. Demarais
P. G. Denker
E. T. Dewey
F. R. Dieuaide
Fred Dinkler
B. A. Dobbins
A. H. Domm
R. M. Donauer
J. P. Donelan
Ephraim Donoso
G. D. Dorman
D. W. Drew
B. A. Duffy
T. C. Dunlop
L. B. Dunn

L. H. Earle, Jr.
T. M. Ebers
L. B. Ellis
L. J. Emanuele
J. C. Emmett
J. A. End
P. S. Entmacher

A. H. Faber
J. G. Falconer
R. K. Farnham
R. M. Filson
R. W. Finegan
Frederick Fink
L. F. Flick
P. M. L. Forsberg
J. R. Forsythe
C. R. Fravel

F. I. Ganot
D. S. Garner
J. T. Geiger
D. B. Gelfond
A. J. Gerl
E. E. Getman
R. B. Giles
F. W. Gluck
R. A. Goodell
George Goodkin
H. M. Goodman
R. S. Gordon
C. D. Gossage
G. M. Graham
R. H. Graham
Ghent Graves

Charles Gray
A. C. Grunow
R. S. Gubner
J. R. Gudger
V. W. Gunter

I. M. Hall
Llewellyn Hall
G. W. Halpenny
V. G. Hammond
J. A. A. Harcourt
A. S. Harned
Harmon Harvey
T. H. Harvill
N. B. Hasler
L. E. Hathaway
H. L. Hauge
J. G. Heard
Milton Helpern
M. H. Henderson
O. C. Hendrix
R. E. Henning
E. J. Herpich
H. H. Hershey
E. V. Higgins
N. A. Hill
W. H. Hill
E. C. Hillman, Jr.
D. E. Holman
J. C. Horan
A. B. Houston
W. H. Hover
E. G. Howe
T. B. Hoxie
H. W. Hudson
A. A. Humphrey
J. L. Humphreys
J. H. Humphries
B. L. Huntington
J. J. Hutchinson
J. R. B. Hutchinson

Irving Imber
A. S. Irving
J. G. Irving

A. N. Jay
F. E. Jenkins
T. P. Jernigan, III
J. W. Johnson, Jr.
R. M. Johnson
Rhodes Johnston
Nathaniel Jones
Raymond Jonnard

J. R. Karns
W. J. Karr
E. A. Keenleyside
F. J. Kefferstan, II
N. R. Kelley
N. C. Kiefer
C. E. Kiessling
Richard King
Douglas Kinnear
C. T. Kirchmaier
R. C. Kirk
H. B. Kirkland
Paul Kurzweg, Jr.

Phillips Lambkin
W. F. Larrabee, Jr.
A. L. Larson
Dwight Lawson
C. M. Lee, Jr.
H. R. Leffingwell
W. R. Leute, Jr.
J. C. Lindner
W. H. Lindsey
E. H. Lindstrom
N. G. Long
W. C. Lowery
G. J. Lunz
J. M. Lyle

F. M. McChesney
H. M. McCue, Jr.
D. T. McEwan
J. D. McGaughey, III
F. J. McGurl
T. J. McGurl, Jr.
George McLean
L. L. McLellan
W. J. McNamara
Morton Magiday
John Malgieri
O. T. Mallery, Jr.
A. F. Mangelsdorff
F. T. Mansure
P. V. Martin
Arthur Master
F. A. L. Mathewson
F. D. Mauk
F. M. Miller
H. E. Miller
L. C. Miller
M. B. Miller
G. S. Modjeska
R. C. Montgomery
J. F. Moore, Jr.
S. R. Moore
J. F. Moran, Jr.
J. R. Murphy

S. A. Narins
R. M. Nay
M. H. Neill
R. E. Nicholson
E. C. Noble

A. J. Oberlander
R. D. O'Connor
R. J. Oehrig
W. F. H. O'Neill
J. K. T. Ormrod
L. M. Orr

A. E. Parks
J. S. Pearson
D. S. Pepper
A. M. Phillips
J. C. Pierson
F. I. Pitkin
T. E. Plucinski
A. A. Pollack
Robert Potashnick
C. S. Prosser
H. E. Pugsley
A. E. Purdy
W. O. Purdy
M. A. Puzak

J. H. Ready
E. B. Reed
C. L. Reeder
C. D. Rehm
P. V. Reinartz
W. A. Reiter
W. A. Reiter, Jr.
W. M. Reynolds
D. C. Roberts
H. E. Roberts
P. I. Robinson
Manuel Rodstein
H. B. Rollins
Isadore Rosenfeld
E. S. Ross
J. G. Ross
M. E. Rougraff
Bartholomew Ruggieri
N. R. Ruud
M. T. Ryman

R. S. Schaaf
K. F. Schaefer
B. T. D. Schwarz
R. C. Secor
A. F. Seibert
C. L. Sexton
T. S. Sexton

Daniel Sheehan
W. P. Shepard
J. T. Sherican
F. J. Siber
G. A. Simpson
H. N. Simpson
R. B. Singer
Archibald Sinson
N. H. Sloan
W. A. Smith
C. F. Spalding
C. G. Spivey
F. L. Springer
H. F. Starr, Jr.
C. S. Stephenson
D. F. R. Steuart
L. Q. Stewart
Robert Stock
Damien St. Pierre
R. B. Sylvester

J. C. Talbot
T. F. Tanner
M. J. Taylor
L. J. Tedesco
G. F. Tegtmeyer
M. S. Tenbrinck
W. C. Thompson
K. J. Thomson
W. B. Thornton
Joseph Travenick, Jr.
F. D. Truax
Maurice Turcotte

J. W. Unger
H. E. Ungerleider

P. C. Waldo
K. E. Ward
F. A. Warner
G. H. Watters
Jefferson Weed
J. L. Weinstock
C. W. Whitmore
J. A. Wilber
J. A. Wilhelm
E. S. Williams
A. C. Wilson
E. R. Wilson
S. G. Wilson
J. S. Winder
R. G. Wood
D. H. Woodhouse
M. A. Woodside

L. S. Ylvisaker
G. G. Young

Also present were:

J. F. Anderson
H. H. Bijesse
E. J. Bohne
A. T. Everett
R. F. Githens
E. S. Jackson
W. J. Kasura
R. F. Killion
Edward King
T. H. Leath
Joseph Lerner
E. A. Lew
W. J. McBurney
A. P. Morton
L. N. Parker
R. W. Parsons
Pearce Shepherd
O. G. Sherman
W. M. Stufflebeem
R. H. Trench Thompson
R. J. Vanderbeck
A. C. Webster
W. C. White, Jr.
A. V. Whitehall
J. C. Wilberding
Miss Beatrice Leonard
Miss A. M. Lyle
Dr. Carolyn M. McCue
Mrs. D. B. Noble
Miss H. H. Wallace

Total attendance at all sessions, 346.

In Memoriam

Deceased since the Sixty-Seventh Annual Meeting

J. Randolph Beard, M. D.
Mutual Benefit Life Insurance Company, Newark, N. J.
Died April 14, 1959

Norman B. Cole, M. D.
Baltimore Life Insurance Company, Baltimore, Md.
Died August 18, 1959

Edwin G. Dewis, M. D.
Prudential Insurance Company of America, Newark, N. J.
Died November 9, 1958

Edward S. Dillon, M. D.
Penn Mutual Life Insurance Company, Philadelphia, Pa.
Died October 9, 1959

O. M. Eakins, M. D.
Reliance Life Insurance Company, Pittsburgh, Pa.
Died December 23, 1958

J. Keith Gordon, M. D.
Sun Life Assurance Company of Canada, Montreal, Canada
Died August 9, 1959

Walter A. Jaquith, M. D.
Columbus Mutual Life Insurance Company, Columbus, Ohio
Died April 2, 1959

Charles D. McKeown, M. D.
Farmers & Bankers Life Insurance Company, Wichita, Kansas
Died April 29, 1959

Bernard Mount, M. D.
Southern United Life Insurance Company, Montgomery, Ala.
Died October 21, 1957

Cullen Pitt, M. D.
Atlantic Life Insurance Company, Richmond, Va.
Died July 10, 1959

Edward E. Rhodes
Mutual Benefit Life Insurance Company, Newark, N. J.
Died January 19, 1959

Robert L. Rowley, M. D.
Phoenix Mutual Life Insurance Company, Hartford, Conn.
Died May 5, 1959

Stephen S. Werth, M. D.
Reliance Mutual Life Insurance Company, Park Ridge, Ill.
Died March 1, 1959

LIST OF MEMBERS OF THE ASSOCIATION OF LIFE INSURANCE MEDICAL DIRECTORS OF AMERICA

Fred B. Agee, Jr., M. D.	Aetna, Hartford, Conn.
Charles B. Ahlefeld, M. D.	Business Men's, Kansas City, Mo.
Allan B. Ainley, M. D.	Travelers, Hartford, Conn.
Arthur C. Albright, M. D.	Victory Mutual, Chicago, Ill.
Henry Almond, M. D.	Metropolitan, New York City
Thomas H. Alphin, M. D.	Equitable Life Assurance, New York City
Joseph Altman, M. D.	Companion Life, New York City
Alfred F. Anderegg, M. D.	Prudential, Minneapolis, Minn.
Donald A. Anderson, M. D.	Washington National, Evanston, Ill.
Frank R. Anderson, M. D.	Pacific Mutual, Los Angeles, Calif.
Karl W. Anderson, M. D.	Northwestern National, Minneapolis, Minn.
Perry A. Anderson, M. D.	Rockford Life, Rockford, Ill.
G. Burton Appleford, M. D.	Business Men's, Kansas City, Mo.
Nolen L. Armstrong, M. D.	United Founders, Oklahoma City, Okla.
Thomas M. Armstrong, M. D.	Philadelphia Life, Philadelphia, Pa.
Albert B. Ayers, M. D.	Connecticut General, Hartford, Conn.
Nelson J. Bailey, M. D.	Protected Home Circle, Sharon, Pa.
Bernard Baillargeon, M. D.	Alliance Nationale, Montreal, Canada

John W. Barch, M. D.	Lincoln National, Fort Wayne, Ind.
William S. Barcus, M. D.	Pioneer American, Ft. Worth, Tex.
Norman J. Barker, M. D.	Connecticut General, Hartford, Conn.
Gordon P. Barnett, M. D.	Kansas City Life, Kansas City, Mo.
Charles M. Barrett, M. D.	Western and Southern, Cincinnati, Ohio
G. Robert Bartron, M. D.	Midland National Watertown, S. D.
Samuel F. Bassett, M. D.	Prudential, Newark, N. J.
Robert W. Bates, M. D.	Manufacturers, Toronto, Canada
Eliot F. Beach, Ph. D.	Metropolitan, New York City
Irwin W. Bean, M. D.	Fidelity, Regina, Canada
J. Randolph Beard, M. D.	Mutual Benefit, Newark, N. J.
James E. Bee, M. D.	Kansas City Life, Kansas City, Mo.
Murray F. Bell, M. D.	New York Life, New York City
Maurice B. Bender, M. D.	Guardian, New York City
David M. Benford, M. D.	Metropolitan, New York City
Robert A. Benson, M. D.	Metropolitan, Ottawa, Canada
Roy W. Benton, M. D.	Northwestern Mutual, Milwaukee, Wis.
C. Coleman Berwick, M. D.	Metropolitan, San Francisco, Calif.
Francis P. Bicknell, M. D.	State Mutual, Worcester, Mass.
Robert T. E. Bishop, M. D.	Republic National, Dallas, Tex.
William R. Bishop, M. D.	Provident Life Acc., Chattanooga, Tenn.
Henry W. Blackburn, M. D.	Mutual Service Life, St. Paul, Minn.
John E. Boland, M. D.	Country, Chicago, Ill.
William Bolt, M. D.	New York Life, New York City

John M. Bond, M. D.	Northwestern Mutual, Milwaukee, Wis.
Donald T. Book, M. D.	Aetna, Hartford, Conn.
M. Theodore Boss, M. D.	Home Mutual, Baltimore, Md.
John R. Bowen, M. D.	Penn Mutual, Philadelphia, Pa.
J. Thornley Bowman, M. D.	London Life, London, Canada
Ernest L. Boylen, M. D.	Standard, Portland, Ore.
William R. Bradley, M. D.	Phoenix Mutual, Hartford, Conn.
Kenneth F. Brandon, M. D.	Aetna, Hartford, Conn.
Warren C. Breidenbach, M. D.	California Life, Oakland, Calif.
David J. Breithaupt, M. D.	Manufacturers, Toronto, Canada
Harvey J. Brekke, M. D.	Lutheran Brotherhood, Minneapolis, Minn.
Robert D. Brewer, Jr., M. D.	Prudential, Chicago, Ill.
Harry Brodsky, M. D.	Beneficial Standard, Los Angeles, Calif.
Edmund J. Brogan, M. D.	Provident Mutual, Philadelphia, Pa.
Albert W. Bromer, M. D.	Metropolitan, New York City
Arthur E. Brown, M. D.	New England Mutual, Boston, Mass.
C. Alton Brown, M. D.	Home State, Oklahoma City, Okla.
C. Frank Brown, M. D.	Southwestern, Dallas, Tex.
Howard B. Brown, M. D.	Massachusetts Mutual, Springfield, Mass.
Hugh S. Brown, M. D.	Liberty Life, Greenville, S. C.
Ronald F. Buchan, M. D.	Prudential, Newark, N. J.
Martin S. Buehler, M. D.	Reserve Life, Dallas, Tex.
John B. Bullock, M. D.	Life Insurance Co. of Virginia, Richmond, Va.

W. Lawrence Cahall, Jr., M. D.	John Hancock Mutual, Boston, Mass.
Douglas G. Cameron, M. D.	Prudential Assurance, Montreal, Canada
Douglas B. Campbell, M. D.	National, Toronto, Canada
Raymond L. Candage, M. D.	State Mutual, Worcester, Mass.
Alec W. Capon, M. D.	Pearl Assurance, Toronto, Canada
Paul H. Charlton, M. D.	Midland Mutual, Columbus, Ohio
Harry E. Christensen, M. D.	Union Mutual, Portland, Me.
Norman S. Clark, M. D.	Independent Order of Foresters, Toronto, Canada
William A. Clarke, M. D.	Travelers, Hartford, Conn.
Howard R. Clement, M. D.	John Hancock Mutual, Boston, Mass.
Robert B. Cleveland, M. D.	Equitable Life Assurance, New York City
M. Henry Clifford, M. D.	Union Central, Cincinnati, Ohio
Harry A. Cochran, Jr., M. D.	Lincoln National, Fort Wayne, Ind.
John E. C. Cole, M. D.	North American, Toronto, Canada
Norman B. Cole, M. D.	Baltimore Life, Baltimore, Md.
Irwin E. Colgin, M. D.	Texas Life, Waco, Tex.
G. R. Collyer, M. D.	London Life, London, Canada
Harry L. Colombo, M. D.	National Life, Montpelier, Vt.
Martin A. Compton, M. D.	State Mutual, Worcester, Mass.
Frederick R. Congdon, M. D.	Berkshire, Pittsfield, Mass.
Chester E. Cook, M. D.	Southwestern, Dallas, Tex.
J. Lindsay Cook, M. D.	Pilot, Greensboro, N. C.
Robert H. Craig, M. D.	Prudential, Newark, N. J.
Neil L. Criss, M. D.	United Benefit, Omaha, Neb.

Henry A. Cromwell, M. D.	American Capitol, Houston, Tex.
Howard K. Crutcher, M. D.	United Fidelity, Dallas, Tex.
Khurshed J. J. Cursetji, M. D.	Life Insurance Corporation, Bombay, India
John P. Davis, M. D.	Security Life & Trust, Winston-Salem, N. C.
Bryan A. Dawber, M. D.	Penn Mutual, Philadelphia, Pa.
John S. Delahaye, M. D.	Empire Life, Kingston, Canada
Harold D. Delamere, M. D.	Crown, Toronto, Canada
Aniceto Del Rio, M. D.	La Nacional, Mexico City, Mexico
Francis E. Demarais, M. D.	Penn Mutual, Philadelphia, Pa.
Earle T. Dewey, M. D.	Metropolitan, San Francisco, Calif.
John A. Dillon, M. D.	Puritan, Providence, R. I.
Fred Dinkler, M. D.	Great Southern, Houston, Tex.
Albert H. Domm, M. D.	Prudential, Los Angeles, Calif.
Robert M. Donauer, M. D.	Prudential, Newark, N. J.
James P. Donelan, M. D.	Guarantee Mutual, Omaha, Neb.
Verner J. Donnelly, M. D.	Prudential, Houston, Tex.
Gerald D. Dorman, M. D.	New York Life, New York City
James T. Downs, Jr., M. D.	Fidelity Union, Dallas, Tex.
Raymond L. Dross, M. D.	Prudential, Houston, Tex.
Thomas C. Dunlop, M. D.	Manufacturers, Toronto, Canada
Louis B. Dunn, M. D.	Postal, New York City

William W. Eakin, M. D.	Standard, Montreal, Canada
Lyon H. Earle, Jr., M. D.	Connecticut General, Hartford, Conn.
Theodore M. Ebers, M. D.	Connecticut Mutual, Hartford, Conn.
Rolf K. Eggers, M. D.	General Life, Seattle, Wash.
Laurence B. Ellis, M. D.	Boston Mutual, Boston, Mass.
Louis J. Emanuele, M. D.	New York Life, New York City
James C. Emmett, M. D.	Imperial, Toronto, Canada
Jack A. End, M. D.	Northwestern Mutual, Milwaukee, Wis.
Paul S. Entmacher, M. D.	Metropolitan, New York City
Albert H. Faber, M. D.	New York Life, New York City
J. Gilbert Falconer, M. D.	North American, Toronto, Canada
Raymond K. Farnham, M. D.	Metropolitan, New York City
Rexford W. Finegan, M. D.	Metropolitan, New York City
Frederick Fink, M. D.	National Bankers, Dallas, Tex.
Max W. Fischbach, M. D.	Plymouth Mutual, Philadelphia, Pa.
Lawrence F. Flick, M. D.	Provident Indemnity, Norristown, Pa.
James G. Forgerson, M. D.	Metropolitan, San Francisco, Calif.
Philip M. L. Forsberg, M. D.	United Life and Accident, Concord, N. H.
Garth E. Fort, M. D.	National Life & Accident, Nashville, Tenn.
Arthur C. Fortney, M. D.	Western States, Fargo, N. D.
John M. Foster, M. D.	Capitol, Denver, Colo.
Edward M. Freeland, M. D.	New York Life, New York City

Clarence E. Fronk, M. D.	Hawaiian Life, Honolulu, Hawaii
Robert E. Funke, M. D.	Prudential, Los Angeles, Calif.
F. Irving Ganot, M. D.	Prudential, Newark, N. J.
David S. Garner, M. D.	Shenandoah, Roanoke, Va.
Duke R. Gaskins, M. D.	H. B. A. Life, Phoenix, Ariz.
J. H. Geddes, M. D.	Northern, London, Canada
John T. Geiger, M. D.	Metropolitan, New York City
D. Barton Gelfond, M. D.	Philadelphia Life, Philadelphia, Pa.
John P. Gemmell, M. D.	Monarch, Winnipeg, Canada
Edson E. Getman, M. D.	New York Life, New York City
Charles A. Gianasi, M. D.	Continental Assurance, Chicago, Ill.
Edgar G. Givhan, Jr., M. D.	Protective, Birmingham, Ala.
Francis W. Gluck, M. D.	Monumental, Baltimore, Md.
Robert A. Goodell, M. D.	Phoenix Mutual, Hartford, Conn.
George Goodkin, M. D.	Equitable Life Assurance, New York City
Harold M. Goodman, M. D.	Home Beneficial, Richmond, Va.
Harry W. Goos, M. D.	Home, Philadelphia, Pa.
J. Keith Gordon, M. D.	Sun, Montreal, Canada
Robert S. Gordon, M. D.	Security-Connecticut, New Haven, Conn.
Charles D. Gossage, M. D.	Confederation, Toronto, Canada
George M. Graham, M. D.	Lincoln National, Fort Wayne, Ind.
Ghent Graves, M. D.	American General, Houston, Tex.

Harris M. Gray, M. D.	Manufacturers, Toronto, Canada
Floyd M. Green, M. D.	Columbus Mutual, Columbus, Ohio
Charles A. Grimes, M. D.	Prudential, Los Angeles, Calif.
Bruce F. Grotts, M. D.	Prudential, Chicago, Ill.
Albert C. Grunow, M. D.	Prudential, Newark, N. J.
Richard S. Gubner, M. D.	Equitable Life Assurance, New York City
James R. Gudger, M. D.	Mutual, New York City
Van W. Gunter, M. D.	Jefferson Standard, Greensboro, N. C.
Frank R. N. Gurd, Ph. D.	Equitable Life Assurance, New York City
Milton W. Gwinner, M. D.	Western and Southern, Cincinnati, Ohio
Thomas R. Hale, M. D.	Sun, Montreal, Canada
I. Macdonald Hall, M. D.	Massachusetts Mutual, Springfield, Mass.
Llewellyn Hall, M. D.	Phoenix Mutual, Hartford, Conn.
F. Tulley Hallam, M. D.	Bankers, Des Moines, Iowa
John H. Halliday, M. D.	Australian Mutual, Sydney, Australia
Gerald W. Halpenny, M. D.	Royal, Montreal, Canada
Vincent G. Hammond, M. D.	Security Mutual, Binghamton, N. Y.
Ottis E. Hanes, M. D.	Life Ins. Co. of Ga., Atlanta, Ga.
John A. A. Harcourt, M. D.	Toronto Mutual, Toronto, Canada
Frank F. Harris, M. D.	Volunteer State, Chattanooga, Tenn.
Keith S. Harrison, M. D.	Australian Mutual, Sydney, Australia
Albert H. Harrop, M. D.	Great-West, Winnipeg, Canada

T. Haynes Harvill, M. D.	Preferred Life, Dallas, Tex.
Donald M. Haskins, M. D.	Prudential, Boston, Mass.
Norman B. Hasler, M. D.	Commonwealth, Louisville, Ky.
Louis E. Hathaway, Jr., M. D.	Monarch, Springfield, Mass.
Howard L. Hauge, M. D.	New York Life, New York City
Walter C. Hausheer, M. D.	Prudential, Newark, N. J.
Harry M. Hawkins, M. D.	Old Line, Milwaukee, Wis.
Thomas L. Hawkins, M. D.	Western, Helena, Mont.
J. Harry Hayes, M. D.	Union, Little Rock, Ark.
Harvey D. Hebb, M. D.	Life Insurance Co. of Alberta, Edmonton, Canada
Milton H. Henderson, M. D.	Excelsior, Toronto, Canada
Olin C. Hendrix, M. D.	New England Mutual, Boston, Mass.
Roger E. Henning, M. D.	Aid Association for Lutherans, Appleton, Wis.
William A. Henry, M. D.	Franklin, Springfield, Ill.
Ivan C. Heron, M. D.	West Coast, San Francisco, Calif.
Edwin J. Herpich, M. D.	National American, Baton Rouge, La.
Harry H. Hershey, M. D.	Equitable Life Assurance, New York City
William D. Hickerson, M. D.	Union Central, Cincinnati, Ohio
Eugene V. Higgins, M. D.	North American Reassurance, New York City
William H. Hill, M. D.	Progressive Life, Atlanta, Ga.
Ernest C. Hillman, Jr., M. D.	Mutual Benefit, Newark, N. J.
Harold O. Hofmeyr, M. D.	Union Guarantee, Cape Town, South Africa
Joseph C. Horan, M. D.	Metropolitan, New York City
Arnold B. Houston, M. D.	Great-West, Winnipeg, Canada

William H. Hover, M. D.	Prudential, Newark, N. J.
Edward G. Howe, M. D.	Prudential, Newark, N. J.
Thomas B. Hoxie, M. D.	New York Life, New York City
Henry W. Hudson, M. D.	Loyal Protective, Boston, Mass.
Gene I. Hull, M. D.	Bankers, Des Moines, Iowa
Merwin L. Hummel, M. D.	Acacia Mutual, Washington, D. C.
Arthur A. Humphrey, M. D.	Federal Life and Casualty, Battle Creek, Mich.
John L. Humphreys, M. D.	Lincoln National, Ft. Wayne, Ind.
James H. Humphries, M. D.	Home, New York City
J. Edward Hunsinger, M. D.	Republic Nat'l, Dallas, Tex.
Benjamin L. Huntington, M. D.	John Hancock Mutual, Boston, Mass.
Warren J. Hunzicker, M. D.	National Life & Accident, Nashville, Tenn.
J. Morrison Hutcheson, Jr., M. D.	Life Insurance Co. of Virginia, Richmond, Va.
John J. Hutchinson, M. D.	New York Life, New York City
J. Raymond B. Hutchinson, M. D.	Acacia Mutual, Washington, D. C.
Albert S. Irving, M. D.	Commonwealth, Louisville, Ky.
J. Grant Irving, M. D.	Aetna, Hartford, Conn.
Tsugitake Isshiki, M. D.	Asahi Mutual, Tokyo, Japan
Samuel Jagoda, M. D.	State Reserve, Fort Worth, Tex.
Fred E. Jenkins, M. D.	Equitable Life Assurance, New York City
Thomas P. Jernigan, III, M. D.	New York Life, New York City

Hubert R. John, M. D.	Maccabees, Detroit, Mich.
Joseph W. Johnson, Jr., M. D.	Interstate Life and Accident, Chattanooga, Tenn.
Nathaniel Jones, M. D.	Peninsular Life, Jacksonville, Fla.
Raymond Jonnard, D. Sc.	Prudential, Newark, N. J.
Alfred Kahn, Jr., M. D.	National Equity, Little Rock, Ark.
Walter J. Karr, M. D.	Benefit Asso. Railway Employees, Chicago, Ill.
Victor L. Karren, M. D.	Home, New York City
Edward A. Keenleyside, M. D.	Prudential, Toronto, Canada
Frank J. Kefferstan, II, M. D.	John Hancock Mutual, Boston, Mass.
Charles H. Kelley, M. D.	Columbian National, Boston, Mass.
Newell R. Kelley, M. D.	Bankers, Des Moines, Iowa
Robert D. Ketchum, M. D.	Prudential, Los Angeles, Calif.
Roeinton B. Khambatta, M. D.	American Life, Karachi, Pakistan
Norvin C. Kiefer, M. D.	Equitable Life Assurance, New York City
Charles E. Kiessling, M. D.	Prudential, Newark, N. J.
Donald G. Kilgore, M. D.	Republic National, Dallas, Tex.
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